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JPRS-EEI-85-026

5 March 1985

# East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

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5 March 1985

## EAST EUROPE REPORT

### ECONOMIC AND INDUSTRIAL AFFAIRS

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INTERNATIONAL AFFAIRS

CEMA 1981-83 ECONOMIC DEVELOPMENTS DETAILED, COMPARED

East Berlin AUSSENWIRTSCHAFT in German No 48, 28 Nov 84 p 1

[Article: "Economic Development 1981/1983"]

[Text] In 1983, the CEMA share of the world output of electrical energy reached 21.6 percent, of coal--32 percent, petroleum--24.3 percent, natural gas--37.2 percent, iron ore--30.4 percent, and steel--32.2 percent. At present they account for over 30 percent of the production of the machine-building and the chemical industries and for 20 percent of agricultural production; they have 16 percent of the total land under cultivation in the world.

The 39th CEMA conference praised the results of the economic development and cooperation of CEMA countries. Further socioeconomic progress was achieved by mobilizing domestic reserves and by utilizing the advantages of mutual cooperation and socialist economic integration.

Thus the output of the nuclear power stations in operation in CEMA countries rose from 17,800 megawatts in 1980 to 26,000 megawatts in 1983. The sectors that to a major extent determine scientific-technical progress--the metal-working and chemical industries--developed at a rate significantly higher than industrial production as a whole. One of the factors greatly influencing this development was international socialist division of labor; specialized production grew faster than that of the sectors as a whole. The share of specialized goods of reciprocal export of machines and equipment went up from 32.9 percent in 1980 to 41.1 percent in 1983; in the case of the chemical, rubber and asbestos industry, the increase was from 32.8 percent to 35.3 percent.

In agriculture, average annual production during the period 1981-83 exceeded by 3 percent that of the years 1976-78.

The natural gas pipeline Urengoy-Pomary-Uzhgorod-Western Europe became operational ahead of schedule; CEMA and capitalist countries in Europe receive their Soviet natural gas through this pipeline.

In the first 3 years of the 5-year plan period 1981-85, about 8.5 million apartments and single-family homes were completed; this meant an improvement in living conditions for over 30 million citizens of the CEMA countries.

1984 saw a continuation of stable economic development. In the first half of this year, industrial output in most of the CEMA countries exceeded the figures contained in the plans.

Respectively:

|  | Total<br>Growth in 1983 compared to 1980 | Bulgaria | Hungary | GDR               | Cuba | Mongolia | Rumania | USSR              | Czechoslovakia    |
|--|--|----------|---------|-------------------|------|----------|---------|-------------------|-------------------|
| National Income Produced               | 8.0                                      | 13.0     | 5.0     | 12.0              | -    | 25.0     | 9.0     | 12.0              | 3.0               |
| Labor Productivity                     | 6.7                                      | 10.0     | 7.0     | 11.0              | -    | 19.0     | 8.0     | 10.0              | 3.0               |
| in Industry                            | 8.0                                      | 11.0     | 13.0    | 11.0              | -    | 4.0      | 7.0     | 9.0               | 6.0               |
| Gross Industrial Output                | 8.0                                      | 14.0     | 6.0     | 12.0              | 35.0 | 33.0     | 9.0     | 11.0              | 6.0               |
| Generation of Electricity              | 8.7                                      | 22.0     | 7.5     | 6.3               | -    | 13.0     | 4.0     | 9.4               | 5.0               |
| Ferrous Metallurgy <sup>1</sup>        | 4.0                                      | -        | -       | -                 | -    | -        | -       | -                 | -                 |
| Metal-working Industry                 | 16.0                                     | 29.0     | 11.0    | 19.0              | 43.0 | 29.0     | 13.0    | 18.0              | 14.0              |
| Chemical, Rubber and Asbestos Industry | 12.0                                     | 19.0     | 13.0    | 12.0              | -    | 20.0     | 11.0    | 15.0              | 7.0               |
| Textile Industry                       | -  | 12.0     | 1.0     | 8.0               | 48.0 | 75.0     | -       | 3.0               | 6.0               |
| Garment Industry                       | -  | 4.0      | -       | 8.0               | 6.0  | 5.0      | -       | 5.0               | 6.0               |
| Food Industry                          | 7.0                                      | 13.0     | 10.0    | 5.0               | 51.0 | 28.0     | -       | 11.0              | 3.0               |
| Freight Turnover                       | 4.0                                      | -        | -       | -                 | -    | -        | -       | -                 | -                 |
| Foreign Trade                          | 27.0                                     | -        | -       | 33.6 <sup>1</sup> | -    | -        | -       | 35.5 <sup>1</sup> | 27.9 <sup>1</sup> |
| Retail Trade Sales                     | -  | 12.0     | 5.0     | 4.0               | -    | 15.0     | -       | 7.0               | 9.0               |
| Social Consumption Funds               | -  | 15.0     | 9.0     | 12.0              | -    | 16.0     | -       | 5.0               | 16.9              |
| Real Per Capita Income                 | 6.0                                      | 13.0     | 4.0     | 11.0              | -    | 9.0      | -       | 5.0               | 3.0               |

1. Computed according to statistics contained in yearbooks of respective countries  
Source: Statistical commentary in WIRTSCHAFTLICHE ZUSAMMENARBEIT DER RGW-LAENDER 9/84 p 64-67.

INTERNATIONAL AFFAIRS

CEMA ROLE IN GDR POWER PLANT CONSTRUCTION, MUTUAL ENERGY USE

East Berlin NEUE ZEIT in German 28 Dec 84 p 5

[Article by Wolfgang Mitzinger, Coal and Energy Minister: "Power Stations-- Proven Centers of Integration"]

[Text] The development of the coal and power industry of the GDR reveals the willingness of the working people to strengthen the republic economically and to make peace safer. This development is at the same time the result of socialist economic integration and especially of the fraternal cooperation with the USSR, which has from the very beginning been supportive of our republic in word and deed in its efforts to build a coal and power industry.

At present almost half of our electrical energy is produced in power stations that were constructed under the direction of our machine-building industry in cooperation with the USSR and other members of CEMA. Thus virtually 40 percent of the production of GDR power stations is a result of socialist economic integration. Examples are the stations at Thierbach with a capacity of 840 megawatts, Hagenwerder III with the first two 500-megawatt blocks installed in the GDR, Boxberg, at present the largest power station with a capacity of 3580 megawatts and the newest power station in the republic, and Jaenschwalde, which is designed to have a capacity of 3000 megawatts. They guarantee that in the present and future our industry and population has and will have a reliable supply of electrical energy.

The USSR furnished turbines, generators and steam engines. The ash scrubbers came from the Hungarian People's Republic, the suction-draft equipment from the Czechoslovak Socialist Republic, the cooling towers and chimneys were built by the People's Republic of Poland. The assembly took place under the direction of the GDR officials in charge of the construction of power-station facilities.

Ministers Give Information

The construction of the power stations with 210- and 500-megawatt blocks that are fired by raw coal and work on the principle of pumping storage plants are visible examples of socialist economic integration. Our two nuclear power plants Rheinsberg and "Bruno Leuschner" in Greifswald, which today produce about 12 percent of our electrical energy, are also results of the close cooperation of socialist countries.

Thousands of skilled workers, engineers, and economists from the Soviet Union, the People's Republic of Poland, the Czechoslovak Socialist Republic, the Hungarian People's Republic and the German Democratic Republic have played their part in the construction and start-up of these plants. The USSR performed the complex designing tasks and supplied the principal equipment.

The link-up system which was created in 1959 in accordance with a decision of the 11th CEMA conference, has turned out to be very important for a stable and efficient power industry in the socialist countries making up CEMA. This form of socialist international division of labor is designed to help meet the growing energy needs in the fraternal countries of the communist socialist states. Various ways are being used to achieve this. The socialist countries plan and carry out reciprocal deliveries of electrical energy. In addition, they exchange electrical energy. This possibility arises from the fact that the power systems in all the countries are loaded differently at different times. Thus, at specific times the countries furnish one another electrical energy to their mutual advantage. Between 1959 and 1983 the production of power stations comprising the link-up system rose from about 25,400 megawatts to approximately 150,000 megawatts.

The technologies and mining equipment with which the GDR today meets over 72 percent of its primary energy needs or produces about 83 percent of its electrical energy thanks to its domestic brown-coal deposits, and which have resulted from the experiences and the wealth of ideas of thousands of scientists, technologists, and workers, are being used in surface mining in almost all socialist countries to ensure their sources of raw materials and energy. GDR miners and machine builders are making a valuable contribution to the constant increase in productivity and efficiency in the extraction of coal and raw materials.

However, there is in our republic no surface mine in which equipment and machinery from fraternal socialist countries do not play a part in coal production.

Of great importance for guaranteeing a long-term stable supply of raw materials and fuels for the socialist countries united in CEMA were and are agreements concerning joint tapping and utilization of Soviet deposits of natural gas. About 120 direct relationships have been established between enterprises and organizations within the framework of bi- and multilateral cooperation between the GDR and the member states of CEMA in the area of the coal and power industry.

In 1983 alone, over 250 scientific-technical tasks were dealt with jointly by the research and development institutes of the member states of CEMA to increase the efficiency and performance of the coal and power industry sector. Among other things, it was a matter of rationalizing and mechanizing unskilled or secondary work, introducing or perfecting automated systems that would plan, direct, control and monitor the production processes in

surface mining, utilizing energy more efficiently by the increased use of microelectronics and robot technology.

These contacts, through which many workers and collectives have become personally acquainted, are now invaluable when the long-term program of cooperation between the GDR and the USSR in science, technology and production through the year 2000, as well as the decisions of the latest top-level economic conference of the members of CEMA have to be gradually put into practice to achieve excellent quality.

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ALBANIA

EFFORTS TO CLOSE GAP BETWEEN VILLAGE, CITY

Tirana, RRUGA E PARTISE in Albanian No 10, Oct 84 pp 28-38

[Article by Nezhdet Hoxha: "The Party Views the Narrowing of Differences Between Village and City in Close Connection with the Increase in Well-Being of the Whole Society".]

[Text] One of the basic problems in the building of socialism in our country, and one which also constitutes a major feature of party policy in the area of the people's well-being, is the gradual and continual narrowing of essential differences between village and city. These differences are the result of objective economic and social conditions, inherited from the old order, which have been exerting an influence for a relatively long period, even after the establishment of the dictatorship of the proletariat.

With the establishment of the people's power and with the accomplishment by it of a series of radical economic and social transformations, which placed our country on the path of socialist construction, the centuries-old contrast between village and city vanished, the relations of oppression and exploitation of villagers by the landlords and city bourgeoisie were overthrown and the creation of entirely new relations of help and cooperation between the working class and the working villagers was made possible. But despite the great socialist transformations that have been made and which have opened a broad path to the continual and overall progress of the village, important differences between village and city have still been maintained for a long time. These distinctions are connected with the different levels of development of production forces in city and village, with the maturity of socialist relations in production and, in the first place, with the degree of socialization of property and labor, with conditions and manner of life, with the development of education and culture, etc.

Our party has worked unceasingly and continues to work incessantly for the gradual narrowing of these essential differences, always bearing in mind the stages of economic and social development through which socialist construction in our country has passed and is passing. The measures which the party has taken and which it unceasingly continues to take for the gradual narrowing of differences between village and city have had and continue to have a deep political, ideological and socio-economic content with a vital importance for the fate of socialism in our country, because about two thirds of the

country's population live and work in villages and because agriculture constitutes the basis of our economy. By means of these overall measures and the policy as a whole which the party pursues with resoluteness in order to narrow differences, the alliance of the working class with the cooperativist peasantry is constantly strengthened, as is the dictatorship of the proletariat.

The experience of our socialist construction indicates that the struggle to narrow differences between village and city is both long and multidirectional. But the major factor in the expansion of this struggle is the systematic, work, carried on in a conscientious manner by the party. The attitude toward this problem, the manner in which it is treated and resolved and the fact as to whether the essential differences are continually narrowed or, on the contrary, are constantly deepened, as in the capitalist and bourgeois-revisionist countries, indicate, in the final analysis, whether the path of socialism is followed or, on the contrary, whether the paths are closed and openings are left for the penetration of bourgeois-revisionist elements into the economy. That is why the attitude toward this problem, as well as the attitude toward other fundamental problems of the building and defense of socialism, has become one of the major dividing lines at the present time between Marxism-Leninism and modern revisionism.

#### The Party has Correctly Harmonized the Multilateral Ways of Narrowing the Differences Between Village and City

Our party has treated the problem of differences between village and city in a scientific manner and with a revolutionary spirit, as a constituent part of its program for the building and defense of socialism. It has defended Marxist-Leninist thought and developed it further in this area as well by working on the basis of the concrete historical conditions of our country. The paths which the party has followed and continues to follow in order to narrow the differences between city and village have been and are multilateral. At the current stage of full construction of socialist society, the party's policy for narrowing these differences involves the development of production forces, as well as the improvement of socialist relations in production. On the basis of designated objectives in these areas, "as well as other economic and social measures," as was stressed at the 8th party congress, "the well-being of the villagers will be increased and the differences between village and city will be narrowed further" (Enver Hoxha, "Report at the 8th Congress of the AWP," p 29).

Within this framework, a special place has been devoted and continues to be devoted to the development of production forces in agriculture. For this purpose, many investments have been made and are being made for reclamation, irrigation, systematization, fertilization and increasing the fertility of the soil, for the improvement of crop and livestock types and hybrids, etc. As a result of the multilateral measures which have been taken to develop productive forces, our agriculture has made great changes in comparison with the past, as well as from one five-year plan to another. Thus, for example, within these 40 years of the people's power, the cultivated land area has increased approximately 2.4 times in comparison with the pre-liberation



period; motor and energy power have been increased over 90 times in all. Over 84 percent of work on the land, 70 percent of the sowing, 55 percent of the harvesting and 100 percent of the grain threshing have been mechanized. The use of chemical fertilizers not only cannot be compared with the past, but currently in agriculture, 145 kg of active substances are used for every hectare sown or 6 quintals per hectare of chemical fertilizer, which surpasses many countries of the world. The irrigated land area which comprised 10.5 percent in 1938, now comprises about 55 percent. Along with the strengthening of the material foundation of agriculture, the training of cooperativists and the growth in the number of agricultural specialists, advanced techniques and technology have been introduced into the cultivation of crops and animal husbandry.

All these factors have caused agricultural production to increase at a relatively high rate and, at the same time, have caused an increase in the well-being of the peasantry. In this regard, it is sufficient to mention that in 1983 the village population, in comparison with the pre-liberation period, had increased 2.1 times, while agricultural production has been increased 5 times and, in comparison with 1950, 3 times. From the standpoint of the living standard and the cultural educational and health standard of people, the village is approaching the level of the city at a rapid rate. At the present time, there are villages and whole regions which, in many respects, do not differ greatly from the city. This appears more clearly too in the increased circulation of consumer goods and in the fact that today, over 80 percent of the village population live in new houses, built during the years of the people's power, etc.

Along with the development of production forces and the strengthening of the material and technical base in the village, the party has devoted special attention to improving socialist relations in production, and especially to relations of property. Thus, the degree of socialization of property has been increased from 1454 agricultural cooperatives in 1950, the period in which the collectivization of agriculture ended, until now, when, as a result of a merger, we have 419 enlarged cooperatives, of which 47 are cooperatives of the higher type, while some cooperatives have been converted into the property of the whole people. The gradual development of cooperativist property, the transition from cooperatives based on the village to enlarged cooperatives, then cooperatives of the higher type and finally, with the ripening of objective and subjective conditions and on the basis of voluntarism, the gradual transformation of group property into the property of the whole people, constitutes a major new contribution by our party to the treasury of Marxism-Leninism for the full construction of socialist society.

The measures which the party has taken to limit farms and to herd the live-stock on farms are also of special importance. The correct application, according to party teachings, of measures to gradually reduce cooperative farms, as a special form of personal property in socialism, is very important ideologically and socially for bringing important changes in the way of life and in the psychology of cooperativists, for strengthening the socialist attitude toward social property and work, for establishing conditions for better hygiene in the village and for the education of the children and of all workers, etc.

Along with the improvement of property relations, the party has taken continual and important measures to improve the relations of organization and management, the relations of exchange of productive activities and the relations of distribution according to labor. Thus, for example, the measures that have been taken in agricultural cooperatives for concentration, specialization and cooperation in production, for the establishment of functional branches of management and for improvement of other work norms have exerted a positive influence on the improvement of production management and on the growth of the economic effectiveness of the social product in the cooperative sector.

Particular importance has been assigned to the measures taken to abolish the system of compulsory collection of agricultural and livestock products and the establishment of the system of free collection with prices that are differentiated for the plains zones and for the hilly and mountainous ones, as well as the application of differentiated fees for work involving the machine-tractor stations and the abolition of income taxes for agricultural cooperatives in the mountainous and hilly zones, which have led to a narrowing of differences not only between village and city, but also between the mountain and plains zones. Thus, by the improvement of the exchange relations between the state and the agricultural cooperatives and the improvement of the distribution and redistribution of national revenue, by including it in part of the income differential, the cooperatives with small incomes, especially those in the hilly and mountainous zones, benefit every year by a supplement of over 270 million leks. Such a financial policy ensures the possibility of expanded socialist reproduction, even in those agricultural cooperatives with less suitable soil and climate conditions, as well as the acceleration of growth rates in increasing the well-being of the peasantry in general, while narrowing the differences not only between the incomes of workers in villages and those in cities, but also between those in mountainous zones and those in plains zones.

The increase in the role of social consumption funds is one of the directions that the party has pursued in order to narrow the essential differences between city and village. During the whole period of socialist construction, the party has aimed at having the social consumption fund, in both city and village, increase at a more rapid rate than the individual consumption fund, and it has given priority in its distribution to fulfilling the needs of the cooperativist peasantry.

Among the important measures that the party has taken and continues to take in order to develop the public sector in the village are the following: the extension of 8-year education to all villages and the rapid development of secondary education in villages; free health service in villages, along with the operation there of many health institutions and those concerned with social and cultural matters; the electrification of all villages; the improvement of the trade and communal services network; the improvement of the drinking water supply; the extension of automobile roads and telephone connections. Within this framework, particular importance is given to the system of pensions in a centralized form and with criteria that are the same throughout the whole country. "The establishment of a pension system

for all cooperativists....," as Comrade Enver Hoxha emphasized, "constitutes another step forward to improve the well-being of cooperative workers and to make the conditions of life in the village resemble those in the city, and it will serve as a strong stimulus to the progress of agricultures in our socialist village" (Enver Hoxha, "Report at the 6th Congress of the AWP," p 83).

On the basis of the increase in agricultural and livestock products, and of overall assistance by the state in the direction of the village, especially after the completion of collectivization, the rate of increase of the real income of the peasantry has been higher than that of the real income of the urban population. This overall revolutionary process has led and is leading to a gradual narrowing of the economic inequality between the peasantry and the working class. Since 1960, the year of completion of collectivization, real income per person in villages has grown from 1.4 to 2.4 times more rapidly than in cities. As a result, the income level per person in the village has approached that of workers in the city (under conditions of continual growth of real income per person in the city as well). At the moment, there are agricultural cooperatives, even in the hilly and mountainous zones, where the level of the cooperativists' incomes approaches or equals that of workers.

The growth in well-being of the cooperativist peasantry at a relatively higher rate than in the city, on the basis of social work--first and foremost by the cooperativists themselves--and the development of production forces at a rapid rate, as well as the overall assistance by the state for development of the village in all areas and the gradual transformation of group property into property of the whole people, have constituted and continue to constitute the way in which the gradual narrowing of differences between village and city has proceeded and is proceeding. But as experience indicates, the struggle to narrow differences between the village and the city is a long and difficult struggle with a deep ideological, political, economic, social and organizational character, which the party has developed and is developing systematically, in accordance with the stages of the building of socialism, the unceasing development of the socialist revolution and the class struggle.

The Measures Taken by the Party to Narrow Differences Constitute a Step-by-Step Continuity, One After the Other. Within the Framework of the Growth of Well-Being of the Entire People

Our party has pursued and continues to pursue a correct revolutionary Marxist-Leninist policy for increasing the well-being of the entire people. This is made concrete in the continually better fulfillment of the material and cultural needs of all workers in village and city and in the increase in real income per person, always bearing in mind the narrowing of the gap between the wages of city and village workers, between zones and between the various strata and groups of the population. But with all the measures that have been taken and despite the deep transformations which have been made, there still exist relatively tangible differences in the standard of living and in real income per person between city workers and those in the village.

For that reason, the party has stipulated and is applying other important measures to narrow these differences. It views this process as a great matter of principle of prime importance for strengthening the socialist order and the alliance of the working class and the cooperativist peasantry. Measures which have been determined and which have been applied during recent years in the area of rapid development of production forces and improvement of socialist relations in the village have served this aim.

Measures for increasing production investments are of particular importance. During this five-year plan, about 29 percent of the productive investments will be made in agriculture. Bearing in mind that the lowest income level occurs among the peasantry of the mountainous and hilly zones, investments for the opening of new lands, for the systematization of opened lands, for the sowing of blocks with fruit trees, vines and olive trees, etc., are financed by centralized state funds.

In the non-production area and sphere too, a large portion of the expenditures that are made for the construction and maintenance of kindergartens, schools, houses of culture, nurseries, maternity houses, etc., are now provided by the state. Social, educational and cultural conditions have been established in the village which are approximately equal to those in the city. The single, centralized system of social security for the cooperativists, which was established in 1971, 1976 and 1983, has been improved and further expanded. The criteria for various pensions and assistance have not been unified with those of workers, remuneration has been introduced, identical to that in the city, for women during the period of pregnancy and childbirth, measures for payment to cooperativists for temporary inability to work have been improved, etc. At the present time, the cooperativist peasantry enjoys the identical right of pension and the other components of the system of social security as those enjoyed by workers in the city. It also has the right to all medical services gratis. In every agricultural cooperative, there are health centers in which are included dispensary services with a physician, services to mothers and children on a consultation basis and in the maternity house, as well as stomatological and pharmaceutical services. In every village there are health workers and almost one hundred percent of the births occur under medical supervision.

During the years of the people's power, the educational network has been extended to the smallest and most remote villages. For a long time, even in the village, 8-year education has been compulsory, while secondary schools specializing in agriculture and general studies have been widely established. There are twice as many pupils studying today in the agricultural schools alone as there were pupils attending all secondary schools throughout the country in 1960. The demographic transformations of the narrowing of differences between village and city on the educational level of the population constitute one of the important aspects of this vigorous development which our village has had during the period of the socialist construction of the country. During recent years, the rate of growth in the index of level of schooling of the village population has

been about 2.5 times higher than in the city, while the difference in the level of schooling between village and city has dropped from 18.9 percent to 6.9 percent.

A clear Marxist-Leninist line has been followed in the treatment and resolution of problems in the sphere of barter relations between agricultural cooperatives and economic enterprises, such as those of collection of agricultural and livestock products, their processing and distribution to the people, material and technical supplies to agricultural cooperativists, etc. The continual extension of the services sector to every village and agricultural cooperative has also exerted an influence on the economic and social development of the village. Several thousand trade units have been set up in the villages with food and non-food articles, as well as various other articles; restaurants have been set up, as well as a wide network of communal services, where thousands of mechanics, builders, carpenters, shoemakers, barbers, radio technicians, etc., work.

On the basis of the experience that has been gained, and in accordance with the growth in concentration of agricultural production, agricultural products are gradually being transported directly from the field by the organs of collection and trade, thus relieving the cooperatives of the difficulties of transport and achieving a more correct evaluation of agricultural and livestock products, etc. But this process, as practice indicates, must be further expanded and broadened. It is particularly important to establish centers for the processing of agriculture and livestock products as near to the places of production as possible. Experience gained during recent years in transporting wheat directly from the threshing floor and in building granaries and storehouses for keeping some agricultural products near agricultural cooperatives, carried out by the collection enterprises, indicates that many possibilities exist for expanding this process further in the future. But closer cooperation is required between the state and economic organs in the district and the appropriate ministries in order to ensure the material base and in order to organize work on a scientific basis.

Certainly, in order to improve, strengthen and correctly carry out relations between cooperatives and economic enterprises, there are also problems connected with the planning and coordination of tasks between them. But it is of major importance that educational work be strengthened by the basic party organizations, so that the communists, cadres and workers who carry out these relations between two forms of socialist property should understand and treat them in their full extent--politically and ideologically, in the first place, as a constituent part of the application of party policy in the economic area, in order to strengthen the alliance between the working class and the cooperativist peasantry, and in the struggle for the full construction of socialist society. It is only on the basis of an understanding and treatment from this standpoint of the problem that those weaknesses and foreign manifestations which are sometimes encountered in the carrying on of these relations will be combatted at the root and eliminated. The point is that in work to improve relations between two forms of property,

we should always have, at our epicenter, Comrade Enver Hoxha's instruction to the effect that "A great problem that is not only economic, but also ideological and social, is the correct harmonization of the interests of cooperativist property with the overall interests of society. The party must combat the tendency, observed in some cases, to enclose the interests of the group within a certain framework and to view them as separate from the interests of the whole society, as well as the tendency to infringe on the interests of the cooperative in the name of the alleged general interest" (Enver Hoxha, "Report at the 8th Congress of the AWP," pp. 124-125).

The measures which the party has taken and continues to take constitute a step-by-step continuity in accordance with the stages of economic and social development of the country, resolutely maintaining the permanent policy which the party has followed and is following in the area of the entire people's welfare. It is important that it should be correctly understood by all that these measures do not constitute a sacrifice on the part of the city for the village. On the contrary, they are a constituent part of the program which the party applies in accordance with the conditions that are created by the gradual narrowing and even complete disappearance of essential differences between village and city. This is so not only because of the fact that these measures aim at improving the distribution of centralized state funds, which are the contribution of the entire working masses, the working class and the cooperativists, but also because of the fact that "The working class," as Comrade Enver Hoxha stresses, "views the peasantry as its most trustworthy ally."

For that reason, in the whole process of struggle and work that is done for the overall development of the village, the working class must be in the forefront and must not lessen its attention to the village at any time or in any manner. It must diligently fulfill all of its duties to the village in the same way that it fought for the liberation of the country and for the victory of the revolution, in the same way that it works and struggles with heroism for the full construction of socialist society. Our peasantry has been the legitimate and faithful ally of the working class throughout all the stages of the people's revolution and the building of socialism. As such, as Comrade Enver Hoxha emphasizes, "Every attitude which does not bear in mind the needs and interests of the peasantry has been viewed and is considered by the party as a tacit, conscious remnant of the underrating of the village and a manifestation of bourgeois ideology" (Enver Hoxha, "Report at the 6th Congress of the AWP," p 82).

Effective Work to Increase Production and to Develop Every Agricultural Cooperative Economically Remains a Major Factor in Narrowing Differences

The measures which have been stipulated and which are being applied by the party for the rapid development of agricultural cooperatives are multi-lateral, and special importance has been given to them for the improvement of relations in the distribution of the social product, because this makes concrete not only the relations of socialist property, but also the economic policy of the party, which always keeps in view the dialectical



unity which exists between production and distribution of material goods on the basis of the requirements of the economic laws of socialism. But the basis of improvement of all relations is the development of production and the growth of the social product at a rapid rate. For that reason, the increase of production, the continual and manifold development of productive forces and the realization and over-fulfillment of all tasks specified in plans for the economic development of every agricultural cooperative have been and remain essential for narrowing differences between village and city and for increasing the well-being of the peasantry. All the measures which the party has taken in recent years in the area of production relations, especially in barter and distribution relations, have been made possible only because of the development and strengthening of our socialist economy and the selfless labor of the workers in village and city to increase agricultural livestock products. For this reason, it remains a permanent task of the party organizations and their levers to strengthen ideological and political work in order to inculcate deeply in all, especially in the peasantry, the concept that the basis of the achievement of all objectives determined for the rapid development of the village, for increasing well-being and for narrowing the differences between village and city consists in work expended with great effectiveness in the collective form, after which comes the assistance and support of the state which, as always, has not been lacking and will not be lacking in the future.

Viewing matters from this standpoint the further strengthening of party work, on the basis of research data, in order to draw up and carry out maximum, real and mobilizing plans takes on a great importance. For this reason, within the framework of drawing up the 1985 plan and the draft plan of the eighth five-year plan, the study, application and utilization of all the great and inexhaustive reserves which our socialist agriculture has, and which it continually creates, constitute tasks of the first importance for the party organizations, for the state and economic organs and for the organizations of the masses. On the basis of progressive experience, which is found everywhere and in all areas, it is imperative that the agricultural operations analyze their work with a critical eye, determining concrete objectives and measures for the future, in order to make that qualitative leap which the party requires for the development and modernization of agriculture. Within this framework, particular importance is given to the expansion of measures to improve the organization and management of work and production, to strengthen work discipline and for the application, in ever greater proportions, of the data of agricultural sciences and progressive experience by all agricultural workers.

Now that all the agricultural operations have entered on the path of intensive development, when the accumulation fund of the agricultural cooperatives, along with the credits and investments of the state, are growing, considerable funds are placed at their disposal which, when utilized efficiently, make it possible to increase agricultural and livestock products, as well as incomes, in agricultural cooperatives. On this basis, the well-being of the cooperativists will increase further and differences will be narrowed between village and city, as well as between hilly mountainous and plains zones. For that reason, great importance is

assigned to the work of the party organizations and their levers in evaluating and correctly utilizing the funds which are placed at the disposal of agricultural cooperatives for the development of the village as a whole. It is important that the funds designated for every project should be well accounted for and not only realized in time, but also that a strict regime of savings in their utilization should be applied, both in the area of expenditures for manpower as well as for materials, so that the projects that are built should be put into operation within the specified time period and with as little expenditure as possible.

It is a fact that because of the work that has been done and is being done by the party organizations and their levers, there has been an increase in the effectiveness of the utilization of funds designated for investment and for other production expenditures. Last year, for example, in the agricultural cooperatives in the hilly and mountainous zones, material expenditures per 100 hectares of agricultural land increased by 12 percent in comparison with 1980, while income increased by 28 percent. This was also due to the increase of state aid composed of indivisible funds and their effective utilization. But in practice, cases are observed of lack of evaluation and lack of proper utilization of these funds. For example, in some agricultural cooperative in several districts, production funds, especially for increasing the irrigated land area, for extending the amount of land under cultivation, for the creation of orchards of fruit trees, for improving livestock breeds and increasing their number, etc, have not been utilized to the necessary extent or have not been utilized on the correct scientific basis and thus have not yielded their potential economic effectiveness.

For that reason, the party instructs that these matters must be more central to the attention of the party organizations and their levers than they have been up to now. On the basis of experience, the state organs in districts, the sections of agriculture and finance, and the agricultural banks must follow the work on every project step by step, on the basis of drafts and estimates which have been made and which must be made better than they have been up to now. The point is that there must be a strengthening of the organization of work and, especially, of control by the state organs so that there is a disciplined application of the designated technical and organizational measures for the execution of work on every project, so that faults and weaknesses may be discovered in time and concrete measures may be taken for their elimination, on order that the work may be done on time, with quality and without over-expenditure of the funds provided.

The measures which the party has taken and which it is applying in the area of development of the village and narrowing of differences between city and village are the expression of the indisputable superiority of our socialist system vis-a-vis the capitalist, bourgeois and revisionist one. Proceeding along unexplored paths, our party has applied the teachings of Marxism-Leninism and is putting them into practice, step-by-step and in a creative manner, under the concrete conditions of our country. Our achievements up to now have inspired in the people an enthusiasm and a feeling of pride in the party and in Comrade Enver Hoxha. During 40 years of building socialism,



they have demonstrated and continue to demonstrate constant concern for the development of the village and for an increase in well-being in the village at as fast a rate as in the city, so that the differences between village and city may be narrowed. This is now the major way of strengthening the alliance of the working class and the peasantry. They have mobilized, as never before, all the workers of city and village in order to accomplish the tasks of the 1984 plan and the whole seventh five-year plan, so that we may greet the great jubilee of the 40th anniversary of the liberation of the fatherland and the victory of the people's revolution with even greater successes than those which have been achieved until now.

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CSO: 2100/22

CZECHOSLOVAKIA

INTENSIFICATION SEEN AS PRIORITY OF FUTURE DEVELOPMENT

Prague PLANOVANE HOSPODARSTVI in Czech No 11, 1984 p 1-6

[Article by Dr Vitezslav Vinkiarek, deputy chairman of the State Planning Commission]

[Text] In a resolution adopted at the beginning of 1983 the CSSR Government reorganized the flow of work related to long-term prospects for economic development and preparations for the Eighth 5-Year Plan. This resolution established a permanent cycle of work in which the Czechoslovak Academy of Sciences [CSAV] develops an overall prognosis for scientific-technical, economic, and social development for a period of 20 years. Planning agencies then use this information to establish the basic objectives of economic and social development for 10 years and, within this context, for a 5-year plan. This is a very demanding cycle and can be implemented only gradually.

The decade which has just passed has been one of great changes in world ---and our own---economic development, many of which were not foreseen. The sharp rise in the prices of primary energy resources, primarily crude oil, and the related rapid increase in the prices of almost all raw materials and other materials has gradually worked its way into all economic relationships and created new economic relations. The rich, who control the raw materials of the world, have gotten richer, and differences have sharpened in the Third World. Socialist countries also have had to react to these new conditions.

Czechoslovakia, a country with inadequate amounts and limited types of raw materials resources, has always had to seek a relationship between its economy and the international division of labor in which it exchanges finished products, primarily machinery and equipment, for imports of energy, raw materials, and other materials, including foodstuffs. This has now become more difficult, so the first step in our reaction was to turn our attention to still accessible domestic raw materials and possibilities for conservation. By achieving some modest success in these areas we were able to maintain growth in our economy. In particular, domestically extracted power resources increased as a percentage of total resources used. Most of this increase was in the form of brown coal, the extraction of which increased in 1984 by 20.4 million tons over 1974 levels, i.e., by almost 25 percent. This was accompanied, however, by a worsening in the environment, the price

that had to be paid to meet the demand of the national economy and population for electricity and heat. Even with hindsight we should not second guess this decision, especially because it was readily implemented. It has also helped us to get through a particularly difficult period.

Conditions significantly worsened at the end of the 1970's. Crude oil prices were raised once again, the situation on financial markets became more complicated and even became the scene of pressure and blackmail. The socialist countries became the object of concerted international economic and political pressure. As the second step, then, in its reaction to these changing conditions, the CSSR designed its 5-year plan for 1981-1985 with economic equilibrium as the main objective of economic growth.

Since at that moment, for a number of reasons, it was not possible to increase exports significantly, limitations were placed on crude oil imports and, temporarily, on imports of a number of other raw materials, materials and semifinished goods, as well as finished products, especially those for capital construction. Given these constraints the plan projected a slowdown in growth in its initial years while the necessary restructuring of assets and resources took place, to be followed by an acceleration of development in the second half of the 5-year plan. Today it is clear that this objective was basically met and that, beginning in 1983, economic growth took off again with relatively lower inputs and a clear trend toward improving equilibrium in the most critical areas. A foundation has thus been formed for a new strategy.

This period of development has shown that it is impossible to return to the conditions of 10 and more years ago. Moreover, our reaction to specific difficulties and the way we overcame them has demonstrated the need to shift to a permanent policy of systematically increasing economic efficiency. This third step, organized in the form of the above-mentioned CSSR government resolution, allocates top priority to efficiency resulting from an intensification of the impact of R&D progress. There is no other alternative. This is the only strategy that is capable of increasing output on a permanent basis and assuring continual national income growth. It is the alternative that we are incorporating into the draft of the next 5-year plan and the longer-range developmental strategy of the national economy. In the year when we will celebrate the 40th anniversary of our liberation by the Soviet Army, we will be turning the attention of the entire domestic sphere to the formulation of a strategically binding orientation for future economic policy.

Future national economic development will have to take full account of the new conditions. We are making plans, therefore, based on the following assumptions:

--that the international situation will continue to be marked by efforts by the worldwide right wing to weaken and destroy socialism. Nevertheless, the relative balance of forces will be maintained. In the interest of this objective the Czechoslovak economy, through an effective division of labor with nonsocialist countries, will continue to develop in such a way as to

strengthen the position of socialism and the certainty of a peaceful life for all;

--that cooperation among the socialist countries will be expanded and improved in the directions established by the summit economic conference of 1984. The core of this effort will be cooperation with the Soviet Union. This relationship will be the source of the primary developmental opportunities for the Czechoslovak economy. In addition, cooperation will be expanded with Third World countries, with particular emphasis on those countries that have chosen the socialist path of development;

--that the under-utilized capacity of the Czechoslovak economy will be mobilized to the maximum possible extent. This consists mainly of opportunities for technical development and the related structural changes, for better utilizing the increasing qualification levels of the work force, for an overall increase in the sophistication of planning and managerial work, as well as for a general increase in an atmosphere of precision, commitment, discipline and order.

This objective of intensive national economic development will depend upon technical development and an effective division of labor and management capable of handling this stage of development. It is the only developmental option that can assure increases in output over the long term and therefore also the long-term stable increase in national income. We are assuming that the draft of the 5-year plan for the 1986-1990 period will be formulated by sectors, economic production units [VHJ's] and enterprises in accordance with this fundamental strategy so that it will be possible to achieve average annual rates of gross national income growth in the vicinity of 3.5 percent. These entities should also formulate the preconditions for increasing the annual increments in gross national income after 1990.

This variant of national economic development does not call for growth, and especially growth of industrial production, at any price. It instead calls for an increase in the production of efficient products that can find effective application, and the phasing out of those products which are not effectively manufactured or are manufactured at a loss. Under these conditions, the critical objectives for assuring the requisite increase in output, and therefore increase in national income, will be to reduce production consumption for a given product and to increase the value added to it during production for both domestic and foreign markets. This, obviously, cannot be achieved by arbitrarily raising the price because of the risk of losing markets. Increasing the technical sophistication of products while at the same time reducing their production costs is the only way to go.

The formulation of drafts of the 5-year plan and other objectives for national economic development that we are embarking on at the present time will require, in relation to the above-mentioned fundamental objectives, the working out of a number of significant structural changes in the macro-, mezzo- and microstructures of production. Every decision intended to foster this strategy must have an impact, otherwise it loses its rationale.

One of the most complicated issues that must be addressed is that of making changes in the size and structure of the fuel and power base of our country so as to facilitate national economic growth. In recent 5-year plans energy inputs into the economy have been increasing by an average of 10-12 million tons of standard fuel of primary energy. Energy has been inexpensive and during the period in question all these increases were provided through imports. Now energy is the most expensive of all the primary raw materials and the energy-intensiveness of future economic development is measured not so much by how many tons of standard fuel we require per unit of national income, but primarily by how much we have to pay for each of these tons. Under conditions where primary energy is too expensive it is not feasible for increases in energy inputs to exceed roughly 25 percent of what they have been in the past, i.e., about 3 million tons of standard fuel. Economic development must take account of this, as must the drafts of the upcoming 5-year plan.

Plans for restructuring the economy must also take account of energy-intensiveness. One of the key related objectives is the gradual reduction in the production and consumption of pig iron and steel, cement, heavy chemical production as a percentage of industrial output, etc. The same objective is being pursued by the rapid development of production that adds considerable value to fuel and power, namely electronics, instrumentation, specialty chemicals, pharmaceuticals, etc. Part of the overall program for reducing energy-intensiveness is the general rationalization of energy consumption, which is reflected in the state priority program for increasing the efficiency of the consumption and use of fuel and power.

The objective of reducing the drag on national income of the costs of obtaining primary energy requires the implementation of complicated programs that demand considerable coordination of effort. These primarily involve the gradual phasing out of the use of petroleum products to generate electricity and heat, because these operations currently operate at a loss. Primarily in the context of overall increases in consumption efficiency, petroleum products are to be replaced where necessary with natural gas. The increasing production of electricity in nuclear power plants will make it possible to reduce significantly coal consumption for electricity generation which, along with reduced consumption of heating oils, will result in substantially lower concentrations of sulfur oxide in the air, especially in the North Bohemia Kraj.

The necessity of reducing the production and consumption of metal in the national economy is closely related to these objectives. Almost 1 ton per inhabitant is too much; we cannot allow ourselves to consume this much metal in assuring the projected increases in industrial output--above all machine building--and in the projected growth of capital investment and construction. In other words, with this level of metal consumption we should have a much larger machinery output than is in fact the case. Even if we did, we would be hard pressed to find markets, especially foreign markets. Given this situation, it is prudent to formulate an option with lower production and consumption of metal, while increasing the quality and value of the metal used and increasing the value added for user sectors.

The restructuring of the economy must be directed so that there will be a gradual increase in white-collar and skilled labor as a percentage of total labor and so that these positions will be created in sophisticated production environments that add considerable value to power, raw material, and material inputs. Moreover, the value that is added must be marketable both at home and abroad.

One of the important areas where structural changes will occur is the chemical industry. Current practice, in which only 17 percent of total refined crude oil is used for chemical purposes and almost 40 percent for energy purposes, is untenable over the long term for economic reasons that have already been mentioned. We are therefore proceeding to develop a structure for crude oil processing in which the ineffective utilization of a portion of the crude oil in the power generation sector will gradually be replaced with higher value added products from cracking facilities and the further processing of these products by the chemical industry.

The draft of the next 5-year plan and the long-range plan in this area will, in the interest of greater value added, request the development of programs which will facilitate the development and production of specialty chemicals and pharmaceutical products. It is a shame that we suffer in these areas from a serious lack of innovative activity. The copying of technologies and products which are already common on the world market carries with it the danger that the market will not recognize our qualified efforts. We need to shift to a greater extent to specialties which are products of original Czechoslovak research and which would be in demand on world and especially socialist markets.

Over the long term, machinery will account for an increasing percentage of industrial output. There will also be many changes in the role of the machine building sector in the national economy. More than is now the case, the machine building sector will perform the function of bringing to market the fruits of the most qualified people whom our society has at its disposal. The creative work of researchers, designers, and design engineers will be evaluated directly, i.e., through the effective sale of Czechoslovak machinery abroad, and will have a greater impact on domestic users as well, as a major part of increased machinery output. The role of the machine building sector will change as well in relation to foreign countries, both socialist and nonsocialist.

We are assuming that development will accelerate in those machine building sectors which are allocated the most highly qualified people, and that domestic and foreign buyers will flock to purchase the output of these sectors. This does not mean that we want to distance ourselves from our current machine building tradition. The traditional divisions can remain and even thrive if the most recent R&D advances are incorporated into their products. This basically means that capital investment in the machine building sectors, but not it alone, must make use of the R&D advances of other engineering sectors, above all instrumentation, hydraulics, and electronics. But first of all, these sectors will have to prove themselves capable of competing and surviving independently.

Perhaps the top priority of current socialist development is for the general engineering sector to create more opportunities for significant advances in efficiently dividing labor with foreign firms. Because the CSSR is a country with inadequate amounts and limited types of raw materials, and because recent development has been based on imports of fuel, energy, raw materials, and other materials, including raw food materials, a primary role of the general engineering sector has been to pay for these imports. Now these imports will not increase, nor is any significant increase anticipated in the prices of current raw material imports. In agriculture, however, we are striving to increase our self-sufficiency. Additional growth in exports of machinery and equipment will to a significant extent compensate for increased machinery and equipment imports. The internal sectoral division of labor has now become a top priority. Serious account must be taken of all the foregoing considerations during work on the draft of the next 5-year plan.

Moreover, the general engineering sector is slated in the near future to play a larger role in our relationships with Third World countries. Their industrialization is still on the agenda and our engineering sector has rich experience in this area. At the same time, pressure is increasing to meet these countries halfway in terms of providing an outlet for their goods. This is not simply a matter of purchasing those agricultural and food products which cannot be grown in a temperate zone, but also of industrial products which these countries are beginning to produce (mostly consumer goods of a nonmachinery nature) and with which they are more readily able to pay than with raw materials. The export of machinery which these countries need and payment from them in consumer goods can be an interesting option both for us and for the Third World countries.

This will require, however, another approach to the development of the consumer goods industry in Czechoslovakia. We cannot afford to continue the production of all product lines, even those which do not require the input of highly skilled labor. This would amount to a waste of labor. Instead we will gradually concentrate our efforts on the production of only the most demanded consumer goods in those sectors which are characterized by the requirement for highly skilled labor, and the products of which are in great demand on foreign and domestic markets. This also applies to the processing of agricultural raw materials in the food industry, which must be restructured to assure an increase in the percentage of high-quality products in deliveries for both domestic and foreign trade.

This also involves necessary changes on the domestic market. In the development of the living standard of the population, and especially personal consumption, we cannot continue to ignore the impression that the highest quality products come only from imports. Our society and our economy are maturing. The best consumer and to some extent food items as well, and of course luxury goods, must be domestically manufactured. People have to see that Czechoslovak consumer goods are of exceptional quality. To facilitate this change we will have to say goodbye to the theory--now widespread--that every single piece of merchandise, no matter how ordinary, that happens to be absent from our shelves at a given moment must be



manufactured domestically. It will be desirable to begin importing greater quantities of standard items.

The growth of production will have to be planned so that it does not disrupt an important part of the living standard of the population--the environment. This is not a matter of simply formulating and implementing programs which will minimize negative impacts on the environment. It is also necessary to place limitations on the origin and causes of the harmful pollutants. Sulfur dioxide emissions and the release of solid particles into the atmosphere can be restricted by reducing the production of electricity and heat based on oil and coal. This is slated to happen by switching to nuclear power plants for electricity generation and to natural gas as a source of heat generation. High-temperature tars from anthracite coal can be processed by the chemical industry instead of burning them, with the consequent negative impact on the environment. Recycling waste paper, forest and industrial chips, waste rubber, waste glass, etc., can only contribute to improvements in the environment. Preserving the environment must be, above all, an integral component of the overall objectives for economic development and only secondarily a program of measures to minimize the consequences of those things which we are otherwise incapable of coping with (such as waste-water treatment plants at public housing projects). The planned decisions which we will be including at all levels in the draft of the 5-year plan must be based on these considerations.

Our society at the beginning of the 1990's will have at its disposal a much greater amount of work than at present. This will be the case not because there will be that many more of us, but because the percentage of working people among us will be greater in relation to the total population. A basic factor in this increase will be an increase in the percentage of qualified and highly skilled labor. This will be the first time in the postwar period that this will be the case.

Under these conditions, however, it will scarcely be possible to assume that, figuratively speaking, qualified engineering work will be used to produce simple products. This would truly be a waste. The future structure of production must correspond to the qualification structure that we have available. The key then is the development of national economic structures that require highly skilled labor. To the existing, relatively significant amount of standard tasks we have to add a still greater amount of work in its most qualified form. Planned national economic developments therefore must turn its attention to the quality of labor.

During the period that lies before us, when we will rightly be celebrating the results of 40 years of work, we will also be making plans for the further development of the economy, preparing drafts for the 5-year plan through 1990, along with strategies for longer-term development. At every level of management we must be aware that planned management will be capable of reflecting the socialist basis of production relations only if it can adapt its practices to the need of increasing the efficiency of the labor force that we have at our disposal. In preparing plan decisions we must at all levels calculate, and compare on the basis of these calculations, whether



we are capable of working in a mature world, and what we have to do so we can work in this manner, so that intensification can be a path to higher efficiency, to a stable, relatively rapid increase in formed national income. This is the basis for a better life in the future.

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CSO: 2400/230

CZECHOSLOVAKIA

## IMPLEMENTATION OF USE OF ROBOTS AND MANIPULATORS VIEWED

Prague PLANOVANE HOSPODARSTVI in Czech No 11, 1984 pp 7-13

[Article by Eng Josef Farka and Eng Jaroslav Lacina, Czech Planning  
Commission: "Implementing Automation With Industrial Robots and Manipulators"]

[Text] One of the basic objectives of a socialist society is the continual growth of labor productivity to a point where it is higher than that of capitalism. This goal must be pursued mainly through the consistent implementation of the results of R&D and especially by increasing the technical-economic sophistication of output. It is therefore necessary to implement in a programmed way in all industrial sectors the mechanization and comprehensive automation of all production and nonproduction processes, including manipulation, through the application of electronics and robotics. This rightly places the automation of production and nonproduction processes at the top of the list of national economic priorities. This is characterized by attempts to create the preconditions for comprehensive automation, by which is meant the automation not only of the equipment itself but also of all auxiliary subsystems, above all manipulation operations. One of the results of this trend has been the development of robotics and robot applications as one of the most important areas of mechanization and automation.

On a global scale the production of industrial robots and manipulators [PRaM] is one of the most rapidly growing sectors. In addition to facilitating an intensification of production processes and increased labor productivity, they also make possible increased capital asset utilization, solve problems related to labor shortages, and eliminate dangerous, exhausting, health-threatening, and monotonous work.

The rapid development of electronics in the early 1970's brought with it the installation of the first robots. The most advanced country in this field is Japan, which is currently successfully and effectively using several tens of thousands of robots. Robotization has also begun to evolve in the socialist countries, above all in the USSR, the GDR, Bulgaria, and the CSSR. At the end of 1980 more than 6,000 robots had been installed in the Soviet Union, with plans in place to produce and install at least 45,000 by 1985.

In the CSSR, systematic research and development of PRaM began with the carrying out in the Sixth 5-Year Plan of the state program entitled "A Line of Modular Industrial Robots and Manipulators", and is now being continued in the state program entitled "Adaptive Industrial Robots and Manipulators". Twelve types of PRaM are currently in production and by the end of 1985 production of an additional nine models for manipulating weights up to 160 kilograms will have begun. In addition, single-purpose PRaM are being developed for specific technologies.

The strategy for their development in the Seventh 5-Year Plan was formulated in state priority program 07, "Industrial Robots and Manipulators", which contains the basic guidelines and a set of objectives for the research, development, production, design, and construction of automated work stations [ATP] and automated work systems [AVS], both utilizing PRaM. By 1985, this program projects the production and installation of at least 3,000 PRaM, and at least 13,000 by 1990. Calculations indicate that this will eliminate 5,500 jobs by 1985 and up to 25,000 jobs by 1990.

The CSSR Government Presidium adopted Resolution No 211 in 1981 which provided for the production and installation of 3,545 PRaM during the Seventh 5-Year Plan. Subsequently, the Government of the CSR adopted Resolution No 6/82, in which subordinate sectors were ordered to develop the preconditions for the application of PRaM and to formulate programs for their installation. The Ministry of Industry is to coordinate the installation of 124 PRaM (no specific target was set for any of the other sectors managed by the CSR Government).

On the basis of user comments, the high investment costs involved in PRaM installations, and the low levels of efficiency achieved at early installations, the CSSR Government Presidium worked out a program called "Systemic Measures To Stimulate Increased Applications of PRaM to the Production Process", and adopted Resolution No 67/83. The Federal Price Office then issued Directive No P-6/83 providing for the application of dual and graduated pricing, i.e., higher prices for producers and lower ones for consumers. Their objective is to provide incentives for customers to purchase machines and for producers to produce them, even though the startup of production entails very high initial costs.

It has also been necessary to formulate a Czechoslovak strategy for the technical and production development of PRaM, including the concentrated production of specialized components and subassemblies, and in conjunction with the formulation of a unified strategy for the development of robotic technology for the CEEMA member countries. This issue was the subject of a report that was discussed by the CSSR Government Presidium on 18 August 1983, and which was the subject of Resolution No 168. This was broken down by the CSR Government as No 295, and instructed nonmachinery sectors to establish coordinating organizations to oversee the installation of PRaM, to formulate and carry out during the Eighth 5-Year Plan a program of PRaM installations and the establishment of ATP, including the construction of the necessary technical and engineering facilities to support this objective.

Automation and robotization are the objects of exceptional attention in the CSSR on the part of both government and party organizations. The 8th and 10th plenary sessions of the CPCZ Central Committee adopted a number of measures related to future development in this area.

Cooperation among CEMA countries should play an important role in this area in upcoming years. This is true not only of problems of a technical nature, but also of the utilization of the concepts and terms of a number of R&D trends. In many cases it is not clear where manipulation begins and ends, what exactly is robotics, where electronization and robotics converge, or what exactly is an automaton, robot or manipulator. The use of differing definitions results in variations in statistics, and therefore in reporting on state priority programs. The differences are felt on an international scale as well. It would be very difficult to clarify all of the problems resulting from differing concepts, but it is at least necessary to bring up this issue.

The object of multilateral and bilateral cooperation is primarily "automatic manipulators with programmable controls" (industrial robots). This is the definition used in the USSR. In the area of single-purpose or manually controlled manipulators, cooperation has not as yet been developed for the most part. Multilateral cooperation within CEMA is primarily the concern of the "Permanent Machine Building Commission", as well as certain others. The main role in coordinating development has been taken up by the "Commission of Chief Design Engineers", on which Czechoslovakia has a representative. Most international cooperation, however, is in the form of bilateral relations. A government agreement has been concluded between the CSSR and the GDR for cooperation in the development, production, and installation of PRaM in the general engineering, light industrial, construction, metallurgical, and ore-extraction sectors. An agreement is in the works between the CSSR and Bulgaria directed at the development and standardization of future, modular PRaM.

The greatest attention is being devoted to cooperation with the Soviet Union under a government agreement entitled "Comprehensive Program of R&D Cooperation Related to the Development and Production of Automated Manipulators with Programmable Controls for Various National Economic Sectors and the Organization of Their Cooperative Production in 1981-1985". This program includes the development of industrial robots, the necessary peripherals, and robotized industrial complexes. It also addresses selected problems related to subassemblies, control systems and their programming, including certain questions of unification, standardization and testing.

The Soviet Union, along with the CSSR, has directed its initial efforts at the automating of production processes, especially in general engineering sectors. Currently, work is beginning on a joint Czechoslovak-Soviet design and technical office at Presov VUKOV. In the works is a joint Czechoslovak-Soviet association for the production of modules, subassemblies and components for PRaM that will operate from two plants in the CSSR and two in the USSR. The association will also work on tasks for nonmachinery technologies.

Possibilities for cooperation in the development of the production and installation of PRaM in nonmachinery sectors lie primarily in the area of standardized robot and manipulator components. The startup of the mass production of well-designed modules is one of the most promising aspects of the development of robotization. It has these main advantages:

- development lead times decline sharply,
- the technical sophistication of PRaM increases,
- PRaM prices decline,
- service is simplified,
- startup and operational costs are reduced,
- robotics innovations are made easier.

For these reasons plans are being drawn up for cooperation in this area in the nonmachinery sectors of the CSR. The following areas of concentration have been defined:

#### 1. The glass and ceramics industry

The automation and robotization of the production of color television tubes; the automation of the handling of glass industry production; the automation of finish polishing; automating the placement of ceramic products for bisque firing, etc.

#### 2. The textile and clothing industry

Automation and robotization here will be directed at eliminating slack time and exhausting work in the technical process of chemically treating rovings and the service procedures related to spinning; using PRaM to automate making operations; using PRaM to adjust textile machinery; automating cop removal and empty cop tube mounting on spinning machines, etc.

#### 3. Woodworking industry

The automating and robotizing of surface preparation in the woodworking industry; manipulating flat pieces, etc.

#### 4. Leatherworking industry

The automation and robotization of production procedures for uppers, for surface treatments, for handling leather and pelts, etc.

#### 5. Chemical industry

The automation and robotization of the palletizing of bagged goods; using PRaM to package and ship products for consumer inventories; automating the controls of portal-type PRaM in the chemical industry; automating the introduction of cleaning equipment in the pipe exchangers of coolers and reactors; the automation and robotization of handling operations in the filling of steel tanks with propane-butane, oxygen, hydrogen, etc.

## 6. Food industry

Using PRaM to load and unload fully preserved packages from baskets and carts; the automation and robotization of the palletizing of cans with a capacity of 600 units per hour; the automation and robotization of pallet completion facilities, etc.

## 7. Construction

Using PRaM to produce both powdered and compressed construction materials; the handling of panel board; the loading of dried material into storage areas or onto oven carts, etc.

## 8. Health care

Automating the production of glass lenses; making adjustments during medicine production, etc.

Let us return once again to the beginning of the Seventh 5-Year Plan and the formulation of state priority program 07, "Industrial Robots and Manipulators". Based on these documents, work commenced to set the stage for the application of PRaM primarily to machine-building technologies, under the direction of the Federal Ministry of General Engineering and at the directing facility of Presov VUKOV. This then led also to the formulation of methodological guidelines and of basic definitions (of a manipulator, an industrial robot, and automated technical work station). Provisions were made in the area of nonmachine technologies to identify the possible fields for application.

CSR Government Resolution No 6/82 brought forth initiatives from the industrial, construction, agriculture and food, and health care sectors which, in cooperation with the Ministry of Construction and Technology, began the complex task of formulating a program for the installation of PRaM. Specific sectors and economic production units [VHJ's] have named the divisions responsible for the implementation and are gradually establishing their professional implementational facilities.

In view of the fact that the executor of State Priority Program 07 has not issued methodological guidelines for developing sectoral programs to meet the requirements of nonmachinery sectors, the Ministry of Industry has proposed and formulated, at the Technical and Economic Research Institute of the Consumer Goods Industry, a methodological approach and schedules for the fulfillment of individual phases of PRaM installation in nonmachinery sectors. The coordinator of State Priority Program 07 has adopted these guidelines and the Ministry of Construction and Technology of the CSR has designated them as official.

Preparations and the actual development have been undertaken in several stages. Executors were designated for sectors, VHJ's, and sometimes for enterprises in the area of automation and robotization of processes, and research has been conducted on the possibilities for constructing automated technical work stations [ATP]. Next, so-called "suggestion lists"

were drawn up. The suggestions related to ATP were professionally evaluated at the sectoral level and in certain instances at Presov VUKOV, and sectoral plans were then drawn up for the implementation of PRaM, including completion schedules.

Not all sectors, however, were sufficiently prepared or thorough, meaning that a number of projects made their way into the programs which, based on the definitions of specific types (especially in the situation of the admittedly broad category of manipulators), did not fulfill the objectives set by the State Priority Program. On the other hand, it should be stated that nonmachinery technologies have different criteria related to the application of PRaM making it necessary, especially in VHJ's, to develop and produce special-purpose manipulators and robots. VHJ's have on many occasions set up fully automated production divisions (especially for continuous processes). For this reason when reporting the results of PRaM application their number in different sectors are difficult to compare and differ from those in machinery sectors. With this in mind the situation is as follows in the CSR Ministry of Industry:

|                              | <u>Before 1983</u> | <u>1984-1985</u> | <u>Projected for<br/>7th 5-Year Plan</u> |
|------------------------------|--------------------|------------------|--|
| Total Pram                   | 164                | 85               | 249                                      |
| of which:                    |                    |                  |  |
| from model lines             | 12                 | 19               | 31                                       |
| special-purpose manipulators | 140                | 62               | 202                                      |
| manual manipulators          | 12                 | 4                | 16                                       |

In the other participating sectors in the CSR the situation in the application of PRaM from existing lines is still worse. Table 1 presents the results of setting up workplaces with PRaM through 31 December 1983 (for the years of the Seventh 5-Year Plan).

Table 1. Aggregate implementation results of program to build worksites with PRaM as of 31 December 1983 (for years of Seventh 5-Year Plan)

| <u>Name of<br/>sector</u>              | <u>Number of<br/>PRam used</u> | <u>of which:<br/>manual<br/>manipulators</u> | <u>One-time<br/>costs<br/>(Kcs 1,000)</u> | <u>of which:<br/>investment<br/>(Kcs 1,000)</u> | <u>Production<br/>cost savings<br/>(Kcs 1,000)</u> | <u>Jobs<br/>eliminated</u> |
|--|--------------------------------|--|---|---|--|----------------------------|
| Ministry<br>of Industry                | 164                            | 20   | 58,280                                    | 48,043  | 16,965   | 344.25                     |
| Ministry of<br>Construction            | 135                            | 62   | 51,150                                    | 39,470  | 15,172   | 161                        |
| Ministry of<br>Agriculture<br>and Food | 145                            | 97   | 49,856                                    | 43,976  | 36,828   | 310.5                      |
| Total for CSR                          | 444                            | 179  | 159,286                                   | 131,489   | 68,965   | 815.75                     |

Certain data should be added to that which appears here. In the sector administered by the Ministry of Industry there are two organizations responsible for coordinating the installation of PRaM, namely the Technical Economic Research Institute of the Chemical Industry and the Technical Economic Research Institute of the Consumer Goods Industry. These institutes have set up, in cooperation with VHJ executors, a classification system and assigned individual PRaM to it. They based this work on the definitions used in robotics technology which were in the supplement to the documentary material for CSSR Government Resolution No 168/83. Other sectors used these as well. Some VHJ's surprised with their initiatives, in particular Sklo-Union Crystalex, Furniture Industry, Cotton and Wool Industry, Czech Rubber and Plastic Plants, etc. These VHJ's are making a contribution to the assurance of the difficult tasks associated with the introduction of PRaM above all with their creative capacities, which is helping them to increase the level of automation in their factories.

Within the sector administered by the Ministry of Construction the main executor for the PRaM installation is the Research Institute of Construction Materials.

The Food Industry Research Institute has undertaken the responsibility for coordinating the use of PRaM in the agriculture and food sector. Most of them will be installed in the brewery and malt plant VHJ's.

Within the sector administered by the Ministry of Health, preparations are being made to install PRaM at the Spofa VHJ, which is now designing the necessary production facilities. In the Seventh 5-Year Plan, however, no plans have been made to make any of them operational.

On the whole, it may be stated that in the sectors and organizations managed by the CSR Government, i.e., in the areas mainly of nonmachinery technology, special conditions exist. Most of the already implemented and planned programs for the automation of production processes have been focused on the procurement or development of entire sets of production equipment or lines which incorporate ATP as well as PRaM. For this reason, the table included one-time costs, savings in production costs and relative labor savings only as a percentage of total costs and of savings in automated production units. The aggregate figures therefore include:

- PRaM from model lines,
- imported PRaM with automated production lines,
- special-purpose manipulators developed and produced within individual VHJ's,
- supplemental equipment which is an essential part of production equipment or lines.

To complete the picture it is necessary to present a revised proposal for implementation in 1984 and 1985 (Table 2) and the total projection for the Seventh 5-Year Plan (Table 3). An objective evaluation would make it necessary to analyze each project separately. The main purpose of this procedure is not, however, the reporting aspects, but to increase productivity, raise the quality and speed of production, increase shift utilization and,



last but not least, improve working environments. The tasks set for the nonmachinery sectors in the current 5-year plan will be fulfilled, but not as a result of program 07.

Table 2. Aggregate establishment of workplaces with PRaM for 1984-1985

| Name of sector                   | Number of PRaM used | of which: manual manipulators | One-time costs (Kcs 1,000) | of which: investment (Kcs 1,000) | Production cost savings (Kcs 1,000) | Jobs eliminated |
|----------------------------------|---------------------|-------------------------------|----------------------------|----------------------------------|-------------------------------------|-----------------|
| Ministry of Industry             | 85                  | 4                             | 29,184                     | 23,200                           | 4,032                               | 148             |
| Ministry of Construction         | 74                  | 22                            | 48,690                     | 37,404                           | 16,426                              | 109             |
| Ministry of Agriculture and Food | 131                 | 67                            | 40,707                     | 34,394                           | 7,083                               | 165             |
| Total for CSR                    | 290                 | 93                            | 118,581                    | 94,998                           | 27,541                              | 422             |

Table 3. Projections for PRaM installations for Seventh 5-Year Plan

| Name of sector                   | Number of PRaM used | of which: manual manipulators | One-time costs (Kcs 1,000) | of which: investment (Kcs 1,000) | Production cost savings (Kcs 1,000) | Jobs eliminated |
|----------------------------------|---------------------|-------------------------------|----------------------------|----------------------------------|-------------------------------------|-----------------|
| Ministry of Industry             | 249                 | 24                            | 87,464                     | 71,243                           | 20,997                              | 492.25          |
| Ministry of Construction         | 209                 | 84                            | 99,840                     | 76,874                           | 31,598                              | 270             |
| Ministry of Agriculture and Food | 276                 | 164                           | 90,563                     | 78,370                           | 43,911                              | 475.5           |
| Total for CSR                    | 734                 | 272                           | 277,867                    | 226,487                          | 96,506                              | 1,237.75        |

Our first attempts to use PRaM in nonmachinery applications indicated that automation should be a concern not only of the machinery sectors. The characteristics of the branches managed by the CSR Government, beginning with the Ministry of Industry down to the small service operations run by national committees, vary considerably. The current product mix of the Czechoslovak machine building sector does not make it possible, however, to apply stock-type PRaM to its needs. Instead, users are forced to develop special-purpose manipulators or to procure them from abroad.

For the Eighth 5-Year Plan the CSR Government has formulated a basic breakdown of the tasks in installing PRaM and automated technical facilities; the following figures are considered to be minimums:

| <u>Sector</u>                    | <u>PRaM</u> | <u>ATP</u> |
|----------------------------------|-------------|------------|
| Ministry of Industry             | 320         | 280        |
| Ministry of Construction         | 100         | 85         |
| Ministry of Agriculture and Food | 90          | 60         |
| Ministry of Health               | 40          | 20         |
| Others                           | 50          | 25         |
| Total                            | 600         | 475        |

The "other" sector category includes the Ministry of Forest and Water Management, the ministries of trade and the interior, kraj national committees, and other production organizations under the authority of the CSR Government.

To fulfill the tasks that have been established it is essential:

- to build rapidly engineering and design facilities for designing automated technical work stations utilizing PRaM affiliated with sectoral design and special-purpose design organizations of the VHJ's;
- to establish within VHJ's coordinating organizations responsible for the installation of ATP with the requisite technology;
- to establish a managerial code covering nonmachinery technologies;
- to analyze and recommend programs for all workplaces where there is heavy, health-threatening or exhausting work;
- to set up bilateral cooperative programs with socialist countries related to nonmachinery technologies and the development, production, and installation of comprehensive automation;
- to request that machinery-building sectors develop and produce standardized components and modules based on the analyses described above and that they develop sectoral programs of automation using PRaM.

Rapid developments throughout the world in PRaM development and the installation of automation utilizing them is placing heavy demands on our plants and research institutes. We can no longer mark time, but must with a maximum of effort and commitment fulfill the program for the dynamic, proportional development of production and service processes in such a way as to facilitate more sophisticated production.

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CSO: 2400/230

CZECHOSLOVAKIA

TECHNOLOGICAL-ECONOMIC PRODUCT LEVELS ANALYZED

Prague HOSPODARSKE NOVINY in Czech No 49, 1985 pp 8-9

[Article by Eng Eva Klvacova, CSc, Economic Institute at the Czechoslovak Academy of Sciences: "Two Reflections of Progresss"]

[Text] How do we rate the technological-economic standard of Czechoslovak products? The expressions of indicators differ. On the one hand, the share of top-quality and technologically advanced goods is growing and the share of outdated goods is declining. On the other hand, however, the efficiency of our foreign trade, measured by the development of actual exchange relations, is declining. What is the cause of this controversy? To be sure, the expression of the indicators concerning the technical-economic standard is not always informative, because it is based on administrative rating of the level of technological development or competitiveness of the products. This article presents the causes of such a situation, but the options for their elimination may be suggested only in general terms.

The indicators specified in the plan characterize the technological-economic standard of the goods; the Set of Measures puts them in the foremost place in the structure of production and marketing indicators. For manufacturing enterprises they represent the basic tasks in the implementation of R&D.

Their fulfillment is linked with the absolute majority of the enterprises's material incentives determined by the implementation of R&D achievements by means of preferential treatment or penalizing.

Positive Rating...

At first glance the results seem favorable. The share of new products in the total production of goods went up from 15.8 percent in 1981 to 17.9 percent in 1983. In goods rated by the state testing institutes the share of top-quality products increased--in total products from 26.6 percent in 1981 to 29.8 percent in 1983, in new products from 37.6 percent to as much as 47.2 percent. The situation of technologically advanced products looks even better. While in 1981 their share amounted to 14 percent of the total number of products rated pursuant to Decree of the former FMTIR [Federal Ministry of Technological and Investment Development] No 82/1980 of the SBIRKA ZAKONU on technologically advanced products, in 1983 they amounted to as much as

25.3 percent. Technologically outdated goods had practically disappeared (at least according to the presented statement). In new products the share of technologically advanced goods nearly doubled--see Table 1.

Table 1. Technological-Economic Standard of Goods (development of indicators rating the technological-economic standard of industrial products, in percent)

|  | <u>1981</u> | <u>1982</u> | <u>1983</u> |
|--|-------------|-------------|-------------|
| Total share of new products in all goods of industrial production                  | 15.8        | 15.9        | 17.9        |
| Products rated by state testing institutes, total                                  | 100.0       | 100.0       | 100.0       |
| of which:  |             |             |             |
| grade I  | 26.6        | 27.4        | 29.8        |
| grade II   | 73.1        | 72.4        | 70.0        |
| grade III  | 0.3         | 0.2         | 0.2         |
| New products rated by state testing institutes, total                              | 100.0       | 100.0       | 100.0       |
| of which:  |             |             |             |
| grade I  | 37.6        | 41.3        | 47.2        |
| grade II   | 62.3        | 58.6        | 52.7        |
| grade III  | 0.1         | 0.1         | 0.1         |
| Products rated pursuant to FMTIR Decree No 82/1980, total                          | 100.0       | 100.0       | 100.0       |
| of which:  |             |             |             |
| advanced products  | 14.0        | 19.9        | 25.3        |
| goods of good technological standard   | 85.7        | 80.0        | 74.7        |
| technologically outdated products  | 0.3         | 0.1         | -           |
| New products rated pursuant to FMTIR Decree No 82/1980 of the SBIRKA ZAKONU, total | 100.0       | 100.0       | 100.0       |
| of which:  |             |             |             |
| technologically advanced products  | 28.1        | 50.6        | 53.4        |
| products of good technological standard  | 71.9        | 49.4        | 46.6        |
| technologically outdated goods   | -           | -           | -           |

Sources: Data for 1981 and 1982--"Statisticka rocenka CSSR 1983" [CSSR Statistical Yearbook 1983], SNTL [State Publishing House of Scientific Literature]-Alfa; data for 1983--"Inovace a kvalita prumyslovych vyrobku" [Innovations and Quality of Industrial Products], Statisticke informace [Statistical Information], series Tech, FSU [Federal Bureau of Statistics], author's own calculations.

From the development of indicators specified by the plan of technological-economic standard it may therefore be assumed that while the Set of Measures has been in effect, the technological-economic standard of Czechoslovak goods has distinctly improved, and thus the R&D results were applied with desirable speed.

The situation of Czechoslovak products in foreign markets, however, confirms the exact opposite, as may be deduced from the development of actual trade relations, which in 1983 deteriorated to 71.9 percent of the 1970 value, as shown in Table 2.

Table 2. Development of Actual Trade Relations (Year 1970 = 100)

|                        | <u>1981</u> | <u>1982</u> | <u>1983</u> |
|------------------------|-------------|-------------|-------------|
| Export prices          | 173.7       | 178.4       | 182.3       |
| Import prices          | 221.0       | 234.6       | 253.4       |
| Actual trade relations | 78.6        | 76.0        | 71.9        |

Source: Years 1981 and 1982---"Statisticka rocenka CSSR", SNTL-Alfa; Year 1983 ---FSU data.

Furthermore, additional characteristics of export efficiency, particularly of exports to nonsocialist countries, recorded an unfavorable development. Moreover, an absolutely unambiguous trend reappeared: the higher the level of processing, the worse the results of sales in foreign markets. Especially untoward results may be observed in the electrical engineering industry, and a conspicuous decline was noted in general engineering.

In branches that should be the bearers of R&D the achievements in foreign markets in general uniformly deteriorated. A marked chronic decline of export efficiency indicators, however, is evident in every branch of our light industry. Here it is particularly interesting that the share of most of the listed technologically advanced products is near 100 percent, or has reached that value.

Indicators of efficiency in exports to the socialist countries may not be markedly declining, but here the stagnation is obvious in industry as a whole as well as in most of its branches.

#### ...and Negative Results

In view of some other supplemental characteristics, how does the application of scientific and technological achievements look? The number of guaranteed outputs in the implementation of the state plan for technological development in 1983 not only failed to attain the level of 1981 or 1980 but also, for example, the level of 1975. While in 1975, 749 implementation programs were successfully inaugurated, in 1980 there were only 699 and in 1983 no more than 554.

In the 1981-1983 period the number of certificates issued to authors declined even further (in 1980, 8,260 authors' certificates were issued, in 1981, 7,007, and in 1983, only 6,118). The lack of interest in R&D on the part of the enterprises negatively affected the interest in creativity and new knowledge.

Although the number of applications for innovation proposals, registrations accepted for implementation and the total number of implemented improvement proposals increased, the actually used improvement proposals (115 percent for 1981-1983) reached the lowest growth rate; the rate of the adopted but still not utilized improvement proposals was higher (122 percent for the same period) and the difference between the applications submitted and adopted for use rose at the highest rate--almost 140 percent. Because it is difficult to presume that the quality of improvement proposals would suddenly and conspicuously deteriorate, the reason for their rejection for implementation may be sought again in the limited prospects for their implementation.

Furthermore, the achievements of scientific-technological cooperation within the CEMA countries have not been adequately exploited. Only 66 proposals of the total of 30,666, i.e., approximately 0.2 percent, were newly introduced in 1981 on the basis of [cooperation]. Licenses had relatively the slightest effect on innovation of goods. In the same year they introduced only 90 products.

Nevertheless, new products were developed even further to a considerable degree without the influence of our domestic R&D. On the basis of nonspecified enterprise initiative (without the effect of all research, i.e., also enterprise research, and without inventors' programs), 23,528 products were developed in 1983, i.e., 77 percent of all products newly introduced into production. On the other hand, on the basis of Czechoslovak R&D achievements, 6,920 products (of course, of that number only 555 were based on the state plan, which represents 50 percent of R&D costs) have been introduced. Thus, in the case of most of the newly introduced products a legitimate question arises about the relevance of the innovations, if neither foreign nor domestic science takes part in their development.

By the same token, it should be noted that the participation of R&D in the development of new products in itself can guarantee neither quality nor high technological standards. It is noteworthy, for example, that in machine engineering in 1983, during the rating by the state testing institutes, the worst results by far were noted in the newly introduced products developed on the basis of R&D. Only 12 percent of the rated goods were of first quality, as compared with a total of 55.6 percent [first quality products] among all newly introduced products.

It may therefore be said that the rule does not apply for the CSSR that the more a given line of goods or a product depends on science and technology, the more new knowledge it contains--the higher the results in the form of per kg prices earned in foreign markets. Table 3 graphically illustrates this situation. When marketing products which require very exigent research

(automatic computers, TV transmitters, airplanes, etc.) in EEC markets, the industrially advanced states earn prices about 250 percent higher than when selling goods requiring an average amount of research (textiles, metal-working and printing machinery), and 350 percent more than for products which do not demand research. These differences are very slight in exports of our goods.

Table 3. Average Per Kg Prices in Exports to EEC (machinery exports in \$US in the early 1980's)

|  | Total<br>products | Products requiring    |                     |                     |
|--|-------------------|-----------------------|---------------------|---------------------|
|  |                   | extensive<br>research | average<br>research | minimum<br>research |
| World                                      | 8.41              | 22.27                 | 8.77                | 6.12                |
| Industrially advanced<br>capitalist states | 8.44              | 21.64                 | 8.94                | 6.17                |
| West Europe                                | 7.68              | 16.99                 | 8.26                | 5.93                |
| CEMA countries                             | 2.92              | 3.78                  | 2.88                | 2.83                |
| CSSR                                       | 2.70              | 3.65                  | 2.88                | 2.27                |
| GDR  | 3.13              | 5.96                  | 3.48                | 2.39                |

Source: Kolanda, M., and Tous, O.: "Nektere problemy rozvoje obchodu zemi RVHP strojirenskymi výrobky v podminkach vedeckotechnického pokroku" [Some Problems of the Development of Trade with Machinery Products in the CEMA Countries in the Conditions of R&D Progress], VUZO [Foreign Trade Research Institute] research paper No 230, October 1983.

#### Different Claims of the Indicators

Rated by mandatory indicators of technological-economic standard, in the fulfillment of which the enterprises have an economic stake, the effect of science and technology in the development of the national economy is escalating.

The very opposite occurs when rated by the success in foreign markets or by indicators without the character of specified tasks or those of low priority or with a slight amount of material incentives stemming from [the indicators]. On the basis of those results it may be said that the documented R&D development does not equal actual R&D. Enterprises seem to show little interest in achieving high technological-economic standards, but are rather interested in proving its existence, in fulfilling the growth indicators of the technological-economic standard, which is not at all the same thing. Thus, the Set of Measures failed to eradicate this trend.

As concerns the problem of relatively low standards in the implementation of R&D achievements by assignation of a specific part of the plan for production and marketing (such as goods of high technological-economic standards, where the enterprises must follow the stipulated indicators, for instance, the share of mandatory rated production, the share and volume of new goods and of technologically advanced and top-quality products) and material incentives for the fulfillment of those indicators, the solution is not entirely new.

Indicators expressing quality still remain only indicators; the enterprises in their effort to fulfill them do not act--and will never act--differently than when fulfilling other indicators, i.e., they are trying now and will try in the future to fulfill them as simply as possible. Unlike some other branches, they can fulfill the indicators in a relatively easy way, obtain preferential treatment and avoid the assigned task--to apply the achievements of science and technology.

In the current management system the technological-economic standard is not rated by the consumer but by a decree or a state testing institute. The following are considered products of high technological standards and receive preferential treatment:

--technologically advanced products pursuant to FMTIR Decree No 82/1980 of the SBIRKA ZAKONU;

--products of first quality in the sense of Law No 30/1968 of the SBIRKA ZAKONU on state testing.

The rating of technologically advanced products pursuant to Decree No 82/1980 of the SBIRKA ZAKONU issued by the former FMTIR proceeds only on the basis of documentation (extremely extensive) prepared by the manufacturing enterprise. The enterprise selects in particular a comparable foreign manufacturer, product, and main parameters. It is in its own interest to choose so that the comparison is in its favor and that it is found to be technologically advanced, which entitles it to preferential treatment. The rating agency (SKVTIR) does not have--and cannot ever have--sufficient information to judge the accuracy of the data presented by the enterprise. All it can examine is whether the claim of technological advancement is fully substantiated.

The technological-economic standard of the product is rated by the state testing institute not only on the basis of the documentation; it is actually compared with selected products. State testing institutes are more scrupulous, as is evident also from the fact that according to them, for example, industrial consumer products rated as first quality amount to from 11 to 90 percent, while to a major extent in rating pursuant to Decree No 82/1980 of the SBIRKA ZAKONU, issued by the former FMTIR, as many as 100 percent of products are rated as technologically highly advanced.



## Favorable Preferences

The options of state testing institutes are practically limited to rejection of the truly inferior goods. The existence of rating commissions does not at all preclude the enterprise's participation in selecting a comparable product; the enterprise is interested in selecting a not very advanced product, not only because it obtains a better basis for preferential treatment but also because--except for instances specified by tax regulations --[the enterprise] must pay for the purchase of a comparable product from its own resources and obtain for it foreign exchange.

The inefficiency of the above-mentioned methods in rating the technological economic standards from the point of view of the competitiveness of Czechoslovak goods in foreign markets has been convincingly proven by the 1980 research report of the former Institute for Economics and R&D Management--"Correlation of Quality Rating of Goods With the Criteria of Foreign Trade". On a selected specimen of machinery products which received certain confirmation of quality, i.e., which were awarded the gold medal of the International Engineering Fair in Brno, or the hallmark of technological advance, or of first quality, the author, Olga Hlavackova, studies the conformity of such ratings with the standards of actual competition in foreign markets. Under study were 196 products in all, of which 83, i.e., 42 percent, were successfully marketed in nonsocialist countries (export had been envisaged for all products on the basis of the specimen). It is noteworthy that the share of unsalable goods among the products developed in accordance with the state plan for technological development was even higher (72 percent).

The term of technological advance is also administratively rated. Preferential treatment lasts at most 3 years. This decision stems from the intention to raise the share of innovated products and to accelerate their adaptation. An untoward side effect is the attempt to innovate at all costs even goods for which the tradition and quality would be more important. Because preferential treatment has been introduced in all annual plans since 1981 (which was not the case with the experiment), the enterprise is forced to innovate, even if speciously. How else could it make up for the loss of its preferential treatment after 3 years? In innovations of a high order the time limit for preferential treatment is of a strictly anti-incentive character. After all, it is difficult to expect that such innovations may be developed every 3 years.

A product which successfully meets the challenge of foreign markets cannot be regarded as technologically advanced, but a product with the certificate of a high technological standard of first quality can; and in the same way, a product which is no longer marketable cannot be regarded as technologically obsolete, but a product with an expired term stipulated by technological-economic service life can. In itself, the product may have adequate parameters and may be selling well; nonetheless, no later than 1 month before the expiration of the above-mentioned term the manufacturers must submit a proposal for prejudicial treatment (discount equal to actual profits of the product according to the final calculation for the last year of its production). Because prejudicial treatment offers no ground for restricting

or even terminating the production, the manufacturer must introduce again certain minor and often specious innovations. Thus, he not only avoids penalties, but obtains further preferential treatment. The essentially correct requirement that the asymmetry in preferential treatment and prejudicial treatment must be eliminated therefore cannot be met. According to the pertinent decree, the consumer may request prejudicial treatment in the course of the technological-economic service life; however, in view of the existence of the supplier's market, this option is rather theoretical.

#### A Novelty That Is Not So New

The rating, planning and incentives for the growth of technological-economic standards may also act against the application of scientific and technological achievements in other ways. If we total all the stipulations, we find that about 1 year goes by from the moment when the enterprise begins to prepare its proposal for the assessment of technological advance or quality to the moment when the preferential treatment is granted. So much later [the product] reaches the market.

What conditions must be met by the enterprise to fulfill the planned volume of new products? The definition of a new product includes in that category practically any adaptation of an existing product. To be sure, a product is regarded as new (pursuant to Decree of the FCU, CCU, SCU No 137/1973 on prices in the sense of decrees of the FCU, CCU and SCU Nos 73/1978 and 160/1980 of the SBIRKA ZAKONU), if by its design and certain improved properties it satisfies public needs which had not been satisfied before or, as the case may be, if it satisfies them in a different way, or if its production becomes more efficient, or if the efficiency of its use by the consumer is improved.

Most of the specious innovations are probably hidden behind other forms of satisfaction of public needs, which may be interpreted in very broad terms, while more efficient production makes it possible to grant preferential treatment to various kinds of scarce and imported raw materials and supplies. From the point of view of R&D this may not be very desirable because such savings tend to depreciate the technological standard. More efficient utilization by the consumer may be relatively easily established in the price proposal because that is done by the manufacturer; in view of the existence of the supplier's market, the consumer cannot disagree (after all, he will project the increased costs into his own production, and thus he is not overly concerned about this problem).

The success of innovations is further hampered by the principle that the "new product" may not be compared with imported goods as long as the new product is manufactured by an organization with headquarters in the CSSR (article 13, paragraph 6 of the decree quoted above). This provision explicitly rejects the world technological standard as a relevant criterion. An exception is permitted only in the production that is supposed to replace imports; however, there it usually leads to lower technological parameters, due to the undemanding domestic market, while the price favors the manufacturer and the product in question is not marketed in foreign markets.

Yet another principle helps prevent innovations of higher orders: comparative pricing. Thereby the price of a new product, or part of it, is kept at most in such a proportion to the price of a comparable product in which it is possible to compare the costs necessary for the production and marketing of a new product with the production and marketing costs of a comparable product. The above-mentioned principle has an anti-inflationary purpose and prevents the development of uncontrolled incomes for the manufacturers of new technology. Here it is presumed that preferential treatment is sufficiently advantageous. Nevertheless, in innovations of a higher order preferential treatment has a 3-year deadline, which is not advantageous enough.

### Inventing the Wheel

The enterprise is interested primarily in the fulfillment of R&D indicators, which is reflected in the interest of the workplaces of the R&D base in documenting the fulfillment of the plan (for technological development, basic research, economic research). Over the past 3 years, for example, the fulfillment of the state plan for technological development kept improving (in 1981 the state plan for technological development was 95.5 percent fulfilled, in 1982, 97.5 percent, and in 1983 as much as 98.9 percent). This high fulfillment points out certain problems. By international comparison it is usually considered a great success if 10 percent of the tasks designated for research end with the solution of the given problem. It seems therefore that research is not focused on actual problems and does not seek new solutions, but rather opts for tasks imitating the already available solutions, aimed at minor innovations, etc.

The development of completely new solutions is undercut by the system of task planning with which R&D deals as well as by the system of material incentives granted to researchers. R&D may be far more affected by their operational plans than any other branch of our national economy. They create them mostly on their own because public demand for R&D achievements (except for the demand to replace imports) is extremely low. If the basic task of a research institute and of individual researchers is 100 percent fulfillment of the research plan, if personal and team material incentives depend on that fulfillment, and if the research institute itself determines its operational plan, then the logical result is that research does not set goals for itself whose probability of fulfillment is small. It is sufficient to take a look at appropriate regulations on rewards in R&D to see clearly that completely new designs bring neither the designer nor the research institute such benefits that may compensate for a higher risk of failure.

The supervisory agency even fights against the acceptance of high-risk tasks in the research plan by trying to obtain extensive data before the search for solution begins. Already in the stage when the task is proposed for the plan the research institute is obliged to submit an extensive set of information concerning the planned task, which is difficult to obtain even if a minor improvement of the existing product is planned. Data concerning innovations of a higher order are simply unavailable, but the proposal for the task in the plan cannot succeed without them because they are

an essential part of the preliminary challenge, which is the fundamental condition for the inclusion of the task in the plan.

There is very limited possibility of setting a preliminary price limit for the new product before approaching the solution of the research task, of calculating its economic efficiency according to a series of stipulated indicators, of proposing the extent of its implementation and listing the organizations which would manufacture the product in question, of analyzing the opportunities for utilization of a new product in capital investment, production and foreign trade, etc. (directive of the former FMTIR No 8/1978 on challenge lists approximately three pages of such demands for the tasks of the state plan for technological development). The effort of the supervisory agency to obtain the most extensive data on the planned task possible has therefore an obvious result: research tasks are chosen so that the required information may be submitted, i.e., tasks with low novelty content. Then the research plan may be almost 100 percent fulfilled.

#### From Use to Research

The facts mentioned above lead to a generally unambiguous conclusion about the chronically inferior effect of R&D and the need to improve the planned management system appropriately. On the general level the solution for more efficient R&D may be expressed in three points:

- consolidation of the role of the consumer (user) of new technology;
- higher input of foreign trade in the rating of new technology;
- guarantee that the new technology will be comparable with world manufacture.

Of course, practical implementation of the above-mentioned three categories is far from simple. Realistic consolidation of the role of the consumer of new technology does not presuppose only his participation in the a priori rating of the technological-economic standard, before [new technology] is put in the market. Naturally, that is a necessary requirement; however, it does not suffice. Besides the opportunity to judge the quality, the consumer must have a real opportunity to reject inferior technology and to acquire other technology from other sources, including foreign imports. Therefore, a stronger role of the consumer presupposes a restriction of the "supplier's market" and a lower extent of its monopolization. In view of our economic dimension the best way should be the development of R&D and economic cooperation.

An equally important requirement for realistic consolidation of the consumer's role is also to provoke his imminent interest in the use of new technology. The user-enterprise must be able on the one hand to acquire new technology of good quality, but on the other hand it must be put under continuous economic pressure to make use of that technology. The users of new technology must not regard R&D as some kind of additional assignment or an independent goal of their operations. For them it must become the basic means to achieve national economic efficiency, which in its turn must become the basic criterion in the rating of the operations of the enterprises as well as in the allocation of funds. Of course, the same principle applies for

enterprises that manufacture new technology. For them R&D cannot be an unpleasant, tedious task or a way to gain advantage to the detriment of our whole society (for example, by misuse of the preferential treatment); it must become again the means for better efficiency.

Without creating an environment in which enterprises will be under economic pressure to manufacture and use new technology of high quality, the task to improve the efficiency of R&D will remain insolvable. The premise that the "research-development-production-use" cycle must be accelerated cannot thus have only a one-sided interpretation in the sense of practical implementation of the results of research. On the contrary, a reverse cycle --from use to research--must also be recognized. The users should impose all kinds of pressure on the manufacturers, and the manufacturers on R&D.

Foreign trade should plan an important role in creating an economically challenging atmosphere. In the first place, a completely self-evident demand calls for the participation of foreign trade in the rating of new technology before it reaches the market, for example, by the mediation of specialized institutions (Inspekta), individual foreign trade enterprises, or specialized enterprise units. The purpose of this requirement is the timely prevention of losses stemming from inefficient expenditures of public work.

In addition to the role of assessor of new technology, foreign trade should motivate higher efficiency in R&D mainly by applying the demanding criteria of foreign markets directly to domestic products, by a thorough projection of favorable and unfavorable impacts of the imports and exports of the new technology on the economic results of the enterprises. In this function foreign trade should complement and consolidate the "internal" economic pressure for efficient production and use of new technology and its efficient import and export. Gradually it should make it far more possible to apply pro-export strategy and temper to a certain degree the efforts to restrict imports, which besides offering instant gratification (savings of foreign exchange) often cause numerous disadvantages (or, as the case may be, bring down the technological-economic standards).

Comparability of our new technology with that made by world manufacturers is also a necessary prerequisite for enhancing R&D efficiency. The fulfillment of this condition is critically contingent on our ability to create a situation in which the information on the comparability of our domestic technology with top technology will be imperative above all for its manufacturers and users.

9004

CSO: 2400/204

GERMAN DEMOCRATIC REPUBLIC

ORDER, IMPLEMENTING DECREE ON ATOMIC SAFETY, RADIATION PROTECTION

East Berlin GESETZBLATT DER DEUTSCHEN DEMOKRATISCHEN REPUBLIK in German Part  
I, No 30, 21 Nov 84 pp 341-357

[Official text: "Order on Ensuring Atomic Safety and Radiation Protection of  
11 October 1984," effective 1 Feb 85]

[Text] Based on section 14 on the Atomic Energy Act of 8 December 1983 (see  
GESETZBLATT Part I, No 34, p 325) the following is ordered:

Scope and Objectives

Section 1

Scope

(1) This order ensures atomic safety and radiation protection in the use of  
atomic energy. It applies to:

- government agencies
- combines, economic bodies, enterprises, cooperatives, institutions, social  
organizations--hereinafter called enterprises--and
- citizens

(2) This order also applies to mining and other activities insofar as radio-  
active substances, particularly radon decay products, are present.

(3) Special legal provisions apply to the transport of radioactive substances  
via land, air and water.

(4) Utilization of atomic energy comprises the employment of nuclear in-  
stallations and radiation equipment, including x-ray equipment, contact with  
nuclear materials and other radioactive substances, including the disposal of  
radioactive wastes, as well as associated research and development work.

(5) Atomic safety comprises nuclear safety and measures for preventing the misuse of atomic energy.

(6) Radiation protection is the totality of requirements, measures, means and methods which serve to protect mankind and his environment from the harmful effects of ionizing radiation.

(7) Depending on how they are handled, radioactive substances are differentiated as:

- radioactive materials
- radiation-contaminated materials
- radioactive source material
- radioactive emissions
- radioactive wastes
- radiation-contaminated foods
- radioactive drugs

(8) The terms defined in the appendix shall apply for this order.

## Section 2

### Objectives

The following objectives are to be achieved through atomic safety and radiation protection:

- protection of the life and health of the people and, in terms of genetic influences, of future generations from the harmful effects of ionizing radiation
- protection of the environment from radioactive contamination, particularly by means of responsible handling of radioactive substances and safe storage of radioactive wastes
- protection of the employees of nuclear installations, of other citizens living near nuclear installations and of material property by means of strict observation and application of nuclear safety and radiation protection measures
- protection of nuclear materials and nuclear installations from criminal attack and unauthorized acts
- fulfillment of Safety Control Agreement between the government of the GDR and the International Atomic Energy Agency by verification of the use of nuclear materials solely for peaceful purposes.

## Responsibilities

### Section 3

(1) The directors of enterprises in which atomic energy is utilized shall include atomic safety and radiation protection in the management and planning of their reproduction processes, including research and development, in keeping with their responsibility to protect the health and productivity of their employees and to protect the general population and the environment. They bear responsibility for upholding legal provisions in the areas of atomic safety and radiation protection, for establishing and enforcing plant regulations and for following directives imposed by the governmental supervisory agency. They shall ensure that in the case of hazards to the life and health of the people or to the environment, countermeasures shall be initiated immediately.

(2) The managerial staff of an enterprise in which atomic energy is utilized shall ensure atomic safety and radiation protection within the scope of their responsibility.

(3) In order to provide direct instruction to and supervision of employees who work in areas exposed to radiation (hereinafter called radiation-exposed personnel) and operating personnel, managerial staff members or other employees authorized to be responsible for atomic safety and radiation protection (hereinafter called authorized employees) shall be appointed. Within the scope of the permit granted the enterprise to use atomic energy they shall be responsible for the implementation and enforcement of measures necessary to ensure atomic safety and radiation protection and in particular to enforce legal provisions and plant regulations.

(4) The responsibility of the directors of the enterprises, the managerial staff and the authorized employees shall not be diminished by the employment of inspection officials or by the activities of the State Bureau for Atomic Safety and Radiation Protection.

(5) The obligations of the directors of enterprises laid down in this order also apply to the heads of government agencies under whose immediate jurisdiction atomic energy is used.

(6) If radiation equipment is used or if radioactive substances are handled by ordinary citizens rather than enterprises, the citizens shall be responsible for radiation protection.

## State and Plant Supervision

### Section 4

#### Authorization

(1) An authorization from the State Bureau for Atomic Safety and Radiation Protection is required before atomic energy can be used.



(2) Depending on the type of use of atomic energy, the authorization is granted in the form of a permit or license or registration.

(3) A permit is required for

- the individual stages in the use of nuclear installations
- the operation of radiation equipment and contact with radioactive substances insofar as the type approval for radiation equipment and enclosed radiation sources does not stipulate licensing or registration or unless an exemption from the permit, license or registration is granted.

A permit shall be applied for by the enterprise.

(4) A permit shall be granted based on consent given for the individual stages and steps in the preparation and execution of the projects as required by the given type of application of atomic energy. Once a permit is granted additional consent may be required for partial projects and specialized work.

(5) Licensing is required for the operation of radiation equipment or contact with enclosed radiation sources when thus stipulated in the type approval in accordance with Section 5 and when proof of compliance with the terms of use stipulated in the type approval or in legal provisions has been verified and confirmed. The enterprise shall submit the necessary documentation.

(6) Registration is required for the operation of radiation equipment or contact with enclosed radiation sources if required by the type approval in accordance with Section 5 and upon confirmation of compliance by the user with the terms of use stipulated in the operating instructions.

(7) An exemption from the permit, license or registration for the operation of radiation equipment or contact with enclosed radiation sources may be stipulated in the type approval in accordance with Section 5.

(8) Research and development work involving the use of atomic energy in which atomic safety and radiation protection must be observed require licensing.

## Section 5

### Approval

(1) Radiation equipment, enclosed radiation sources and equipment for ensuring radiation protection and nuclear safety may only be manufactured in series or imported when a radiation protection type approval or a type approval ensuring nuclear safety has been granted by the State Bureau for Atomic Safety and Radiation Protection based on type testing. A type approval may not be required if radiation protection and nuclear safety can be ensured by other means. Radioactive drugs require radiation protection approval.

(2) Radiation protection measuring equipment shall be approved by the Standardization, Measurement and Commodity Testing Office.

(3) The manufacturer or the importer shall provide test samples and shall ensure that the radiation equipment, enclosed radiation sources and the equipment for ensuring radiation protection and nuclear safety covered by the type approval correspond to the test samples and fulfill the imposed requirements.

(4) The type approval for radiation equipment and enclosed radiation sources shall stipulate that the operation of radiation equipment or contact with enclosed radiation sources requires a permit, license or registration or that an exemption therefrom may be granted.

(5) The criteria for type testing and approval shall be stipulated by the president of the State Bureau for Atomic Safety and Radiation Protection. Legal provisions governing other types of approval shall not be affected by this document.

(6) The criteria for radiation protection approval for radioactive drugs shall be stipulated by the Minister for Health in conjunction with the Minister for the Chemical Industry and the president of the State Bureau for Atomic Safety and Radiation Protection.

## Section 6

### Monitoring by the State

(1) State monitoring of atomic safety and radiation protection shall be conducted by the State Bureau for Atomic Safety and Radiation Protection by means of inspections, tests and measurements, evaluation of reports and special medical examinations. Some state supervisory tasks may be delegated to other state agencies and enterprises.

(2) In order to implement monitoring by the state, inspectors and physicians to handle medical questions shall be appointed by the president of the State Bureau for Atomic Safety and Radiation Protection.

(3) Tests and measurements, including the taking of samples, for the purpose of monitoring atomic safety and radiation protection shall be conducted by the State Bureau for Atomic Safety and Radiation Protection or by other state agencies and enterprises. The type, scope and method of testing and measurement, particularly in monitoring individual doses, shall be stipulated by the president of the State Bureau for Atomic Safety and Radiation Protection.

(4) Compliance with the requirements regarding atomic safety and radiation protection in the use of atomic energy shall be reported to the State Bureau for Atomic Safety and Radiation Protection. The type and scope of the reports shall be set forth in legal provisions by the president of the State Bureau for Atomic Safety and Radiation Protection and if necessary shall be defined in concrete terms when the authorization is granted.

(5) Monitoring contamination of the environment and the resulting radiation exposure of the population shall be incumbent upon the State Bureau for Atomic Safety and Radiation Protection. It shall stipulate the type, scope and

method of monitoring to be employed and shall itself perform special monitoring tasks. Within the scope of the monitoring tasks stipulated shall be measurements performed to determine contamination of:

1. the lower atmosphere by the meteorological service of the GDR
2. the water by the Ministry for Environmental Protection and Water Management
3. plant and animal products by the Ministry for Agriculture, Forestry and Foodstuffs

The results shall be submitted to the State Bureau for Atomic Safety and Radiation Protection. The central evaluation of the results shall be incumbent upon the State Bureau for Atomic Safety and Radiation Protection.

(6) The State Bureau for Atomic Safety and Radiation Protection is entitled within the scope of state monitoring to impose conditions upon the directors of enterprises. In particular, it can require of them that radiation-exposed personnel and operating personnel be relieved of such duty for a time, that rooms and installations be closed off and that actions of a medical nature be taken or initiated. The conditions imposed shall be in writing and shall include instructions on the right of appeal.

## Section 7

### Monitoring by the Enterprise

(1) The directors of enterprises which use atomic energy shall ensure compliance with the legal provisions, the stipulations of the authorization, the stipulations of the enterprise itself and the conditions imposed regarding atomic safety and radiation protection. In particular, nuclear safety and physical protection; the records of radioactive substances including radioactive emissions and wastes, as well as the radiation exposure, contamination and local dose rates at work stations and in the environment resulting from the use of atomic energy are to be monitored, and records of the nuclear material shall be carefully kept.

(2) Monitoring by the enterprise requires that directors of enterprises shall appoint radiation protection inspectors (hereinafter called radiological safety officers). The appointment of such inspectors is not required in the case of licensing or registration or if the permit stipulates that a radiological safety officer is not necessary.

(3) The directors of enterprises which incorporate nuclear installations or handle nuclear material shall in accordance with legal provisions appoint inspectors for one or more areas of atomic safety such as nuclear safety, monitoring of nuclear material or physical protection. With the agreement of the State Bureau for Atomic Safety and Radiation Protection these functions may be taken over by the radiological safety officer.

(4) The inspectors are subordinate to the directors of the enterprises and must answer and be accountable to them for their actions. Enterprise directors shall be responsible for establishing the procedures for the inspectors

to follow. Appointment of inspectors requires confirmation by the State Bureau for Atomic Safety and Radiation Protection.

(5) Enterprises may agree to be monitored jointly by one inspector if the scope of monitoring activity in the enterprises involved permits and if the State Bureau for Atomic Safety and Radiation Protection gives approval. The monitoring activities shall be agreed upon in an employment contract which the inspector shall have with one of these enterprises. The establishment of an employment relationship with other enterprises monitored by him is not permitted.

(6) Should the type and scope of atomic energy applications within an enterprise require several inspectors, chief inspectors may be appointed to instruct and supervise them upon confirmation by or at the direction of the State Bureau for Atomic Safety and Radiation Protection.

## Section 8

### Medical Examination of Personnel in Radiation Protected Areas

(1) Radiation-exposed personnel and operating personnel shall be given radiological fitness tests and routine checkups. These radiological examinations serve to prevent intrinsic and extrinsic hazards in addition to maintaining good health. An employee's fitness for duty in terms of workplace and activity shall be assessed based on the state of health as determined by the physician. The results shall be given to the director of the enterprise and to the employee.

(2) The radiological fitness tests and routine checkups shall be conducted by physicians specializing in health physics. These physicians shall report the results of these radiological tests to the State Bureau for Atomic Safety and Radiation Protection. The rights and duties of these physicians shall be stipulated by the president of the State Bureau for Atomic Safety and Radiation Protection in conjunction with the Minister for Health.

(3) The type, scope and methods employed in conducting the radiological fitness tests and routine checkups shall be based on the type of activity involved, the expected radiation exposure in the given area of activity and the combined total of damage and exposure factors present at the workplace and shall be set forth in legal provisions.

## Ensuring Radiation Protection

## Section 9

### Basic Principles

In order to protect the life and health of the people, the radiation protection measures shall be planned such that nonstochastic radiation damage is eliminated and the probability of the occurrence of stochastic radiation damage is kept to a minimum that is both scientifically feasible and at a level acceptable to society.

## Section 10

### Justification

Every application of atomic energy requires proof that it is being employed for the benefit of the socialist society while reliably ensuring the protection of the life and health of the people and the environment.

## Section 11

### Radiation Protection Limit Values

- (1) The primary limit values for individual radiation exposure of radiation-exposed personnel and individual persons among the population are determined by the president of the State Bureau for Atomic Safety and Radiation Protection and may not be exceeded.
- (2) Based on the primary limit values, secondary limit values, derived limit values, operating limit values, reference thresholds and licensing limits shall be stipulated for implementing practical radiation protection measures.
- (3) Proof of compliance with the limit values as per Paragraphs 1 and 2 shall not apply to radiation exposure not resulting from the use of atomic energy or to radiation exposure to patients undergoing medical treatment.
- (4) The limit values as per Paragraphs 1 and 2 do not apply to radiation exposure to patients undergoing medical treatment.

## Section 12

### Optimization

Radiation protection measures shall be planned and implemented such that when atomic energy is used the level of individual and collective radiation exposure of radiation-exposed personnel and of the general population, as well as contamination of the environment, is kept as low as possible at a cost that is socially acceptable. The State Bureau for Atomic Safety and Radiation Protection shall make stipulations in this regard.

## Section 13

### Radiation Exposure Under Special Conditions

In the case of activities which must be performed under special conditions where compliance with the limit values is not possible and which are necessary in order to prevent hazards to life and health or to prevent far-reaching technical and economic damage, it is possible to expose radiation-exposed personnel to increased radiation doses in accordance with stipulations set forth for such occurrences. The necessary stipulations shall be determined by the president of the State Bureau for Atomic Safety and Radiation Protection.

## Section 14

### Categories

- (1) Categories in which monitoring tasks are tailored to existing hazards shall be stipulated for radiation-exposed personnel depending on working conditions.
- (2) Radiation-exposed personnel must be at least 18 years of age. Regulations regarding students and apprentices between 16 and 18 years of age shall be made by the president of the State Bureau for Atomic Safety and Radiation Protection.
- (3) Women may not be employed as radiation-exposed personnel during pregnancy. Nursing mothers may only be employed as radiation-exposed personnel under conditions which ensure that there is no possibility of contamination by or uptake of radioactive substances.

## Section 15

### Radiation Protected Areas

Radiation protected areas shall be constructed within enterprises as a means of tailoring radiation protection measures to existing hazards in the use of atomic energy. Stipulations regarding radiation protected areas shall be set forth in legal provisions, in the authorization or in the type approval.

## Section 16

### Organizational and Technical Radiation Protection Measures

- (1) The type and scope of radiation protection measures, such as ways of limiting radiation exposure, labor organization tasks, measurement and testing, dose monitoring, record keeping and qualification procedures for personnel shall be stipulated in accordance with the possible hazards in using atomic energy. Enclosed radiation sources shall be inspected regularly.
- (2) Comprehensive, failsafe technical systems are preferred for ensuring radiation protection. The use of shielding and distance is preferred as protection against external radiation. In order to prevent internal radiation, enclosures such as boxes and hoods shall be used for radioactive substances. Radiation equipment shall be regularly inspected and maintained.
- (3) For each type of atomic energy use a plant radiation protection order shall be drawn up which is to be implemented by the director of the enterprise.
- (4) Radioactive substances and radiation equipment shall be protected against unauthorized access, shall be fully accounted for, and complete records shall be kept. Other regulations for preventing the misuse of atomic energy shall not be affected by this document.

(5) The president of the State Bureau for Atomic Safety and Radiation Protection shall stipulate how radioactive substances shall be stored.

(6) The transfer or sale of radiation equipment and radioactive substances is permitted only if the recipient or buyer is in possession of a valid authorization.

#### Section 17

##### Radioactive Wastes and Emissions

(1) Radioactive substances which are no longer required for given applications shall be handled as radioactive wastes only if no further use within or outside the enterprise can be made of them or they cannot be reused as secondary raw materials.

(2) The release of radioactive emissions into the environment and the final storage of radioactive wastes is only permitted within the scope of legal provisions. If necessary, these stipulations may be defined in concrete terms when the authorization is granted.

(3) Radioactive wastes shall be collected, processed and stored separately from other wastes. They shall be taken to a central collection and final storage point for disposal unless intermediate storage times of up to one year have led to radioactivity levels below the licensing limits for radioactive wastes or if other stipulations have been made in the authorization. Disposal by any other means is not permitted. The central collection and final storage point for radioactive wastes shall be regulated in a separate document.

#### Section 18

##### Basic Principles of Radiation Protection in Medical Treatment

(1) Radiological procedures, particularly mass examinations, examinations involving labor and sports medicine and new examination processes and techniques in which atomic energy is used, shall be checked for compliance with Sections 10 and 12.

(2) In every single use of ionizing radiation the radiation exposure of the patient must be justified in terms of the information expected to be gained by diagnostic means or the effect expected to be produced by therapeutic means. The supervising and attending physicians must ensure that radiation exposure is kept as low as possible.

(3) Quality assurance programs shall be implemented for activities involving radiological treatment.

(4) The use of ionizing radiation on probands or patients for the purpose of medical research shall be decided on a case-by-case basis.

(5) Physicians who are planning, intending or already performing radiological treatment procedures must provide proof of special expertise, practical experience and the required professional qualifications.

(6) Further stipulations regarding the employment of ionizing radiation for medical purposes shall be made by the Minister for Health in conjunction with the president of the State Bureau for Atomic Safety and Radiation Protection.

## Ensuring Nuclear Safety

### Section 19

#### Basic Principles

The site selection, design, manufacture, erection, commissioning and operation of nuclear installations shall be accomplished such that:

1. events which would cause deviations from normal operation are prevented
2. deviations from normal operation do not lead to faulted conditions
3. in the case of faulted conditions requiring action, equipment and organizational procedures shall prevent the operating personnel and people in the surrounding area from being exposed to impermissible levels of radiation.
4. the consequences of nuclear accidents are held within limits by equipment and organizational procedures

### Section 20

#### Requirements for Ensuring Nuclear Safety

Requirements for ensuring nuclear safety in terms of the site selection, design, manufacturing, erection, commissioning and operation of nuclear installations shall be stipulated by the president of the State Bureau for Atomic Safety and Radiation Protection. Compliance with these requirements shall be monitored by quality assurance programs.

### Section 21

#### Site Selection

The requirements regarding the protection of nuclear installations from external events, protection of the environment in case of accidents and other requirements for ensuring nuclear safety shall be fulfilled in selecting the sites of nuclear installations.



## Section 22

### Design, Manufacture and Erection

The requirements for ensuring nuclear safety shall be fulfilled by equipping nuclear installations with safety systems and by providing high quality in terms of planning the important safety-related systems and the overall installation and in the manufacture and erection of the installation.

## Section 23

### Operation of Nuclear Installations

Commissioning and subsequent operation of nuclear installations is accomplished according to stipulated operating regulations which involve compliance with limit values and safe operating conditions. Events experienced during operation shall be evaluated, deviations from normal operation and their causes shall be disclosed and known causes shall be eliminated. Nuclear installations may be operated only by suitable, qualified personnel.

### Ensuring Protection Against Unauthorized Use of Atomic Energy

## Section 24

### Basic Principles

Nuclear materials are subject to special documentation procedures and monitoring. Nuclear materials and nuclear installations shall be protected against unauthorized and criminal activities.

## Section 25

### Procedures and Requirements

- (1) Based on legal provisions, there shall be in-plant regulations regarding special documentation and monitoring procedures for nuclear material. The documentation shall be provided by means of measurements, calculations, identification or other verifiable procedures. Special monitoring shall be ensured by in-plant procedures and state inspections.
- (2) Verifiable material stock and operating records shall be kept in order to precisely determine material stocks and to document all nuclear materials.
- (3) Construction techniques and safety measures, as well as provisions regarding organization and personnel, shall ensure physical protection during the design, manufacture, erection, commissioning and operation of nuclear installations and of systems and rooms in which nuclear material is handled, as well as during any contact with nuclear material.
- (4) Special documentation procedures and monitoring of nuclear material and of the physical protection of nuclear material and nuclear installations shall

be regulated in legal provisions and if necessary shall be defined in concrete terms when the authorization is granted.

## Off-Normal Events

### Section 26

(1) Precautionary measures shall be taken to prevent off-normal events in enterprises where atomic energy is used.

(2) The necessary means, in terms of personnel, materials and organization procedures, for combatting off-normal events and counteracting their effects must be available. Measures shall be adopted to ensure that personnel and equipment can be employed at all times to immediately combat off-normal events and to limit and counteract their effects. The stipulations of these measures shall include preparation of necessary implementation documents in accordance with the legal provisions of the accident and disaster control service.

(3) If an off-normal event occurs in the use of atomic energy, all necessary steps for combatting the off-normal event, counteracting its consequences, investigating and eliminating its causes or conditions favorable to its occurrence shall be taken immediately, and if necessary medical assistance shall be undertaken.

(4) Off-normal events shall be reported to the State Bureau for Atomic Safety and Radiation Protection. This does not supersede the obligation to report to other state agencies.

(5) Further stipulations regarding the prevention, combatting and reporting of off-normal events and counteracting their consequences shall be made by the president of the State Bureau for Atomic Safety and Radiation Protection.

## Training and Continuing Education

### Section 27

#### Qualification and Continuing Education Programs

(1) Authorized employees, inspection officials and physicians specializing in health physics must have special expertise and practical experience in their corresponding fields. They shall submit proof of the necessary professional qualifications and must be in possession of a state qualification certificate from the State Bureau for Atomic Safety and Radiation Protection which can be obtained by participating in continuing education programs offered by the State Bureau for Atomic Safety and Radiation Protection.

(2) The directors of enterprises, managerial staff and other employees whose activities significantly contribute to atomic safety and radiation protection shall, when requested, participate in continuing education programs offered by the State Bureau for Atomic Safety and Radiation Protection.

(3) The directors, managerial staff and operating and maintenance personnel at nuclear installations who are responsible for the nuclear safety of the installation, as a prerequisite for being allowed to execute their duties, must supply proof of a special qualification and must participate in special continuing education programs.

(4) More far-reaching qualification programs may be stipulated by the president of the State Bureau for Atomic Safety and Radiation Protection for the chief inspectors and other employees who require comprehensive knowledge in the field of atomic safety and radiation protection for the performance of their duties.

(5) Radiation-exposed personnel and operating personnel not covered under Paragraphs 1 through 4 shall obtain the required radiation protection training in one of the professional training or continuing education programs recognized by the State Bureau for Atomic Safety and Radiation Protection or through training courses offered by the enterprise.

(6) The president of the State Bureau for Atomic Safety and Radiation Protection is duly authorized to conduct special continuing education programs following agreement with the heads of the appropriate central state agencies for specific professional groups in the public interest.

## Section 28

### Teaching Plans and Instructional Materials

(1) Teaching plans and instructional materials which are to be used for training and continuing education at universities and technical schools, academies and other educational facilities and which deal with questions of atomic safety and radiation protection shall be coordinated with the State Bureau for Atomic Safety and Radiation Protection.

(2) Before they can be endorsed by the appropriate state agencies, instructional materials and textbooks which deal with questions of atomic safety and radiation protection require approval by the State Bureau for Atomic Safety and Radiation Protection.

### Research and Development

## Section 29

(1) State agencies and enterprises shall on their own responsibility perform or order research and development work which may be necessary to ensure atomic safety and radiation protection in the use of atomic energy in their own areas.

(2) Documentation regarding research and development activities in which atomic safety and radiation protection must be observed shall be submitted to the State Bureau for Atomic Safety and Radiation Protection. The State Bureau for Atomic Safety and Radiation Protection will examine the research and

development projects and will exercise influence over the amount of attention paid to the requirements of atomic safety and radiation protection in the formulation and performance of research activities and in the utilization of their results.

(3) In conjunction with the appropriate central state agencies the State Bureau for Atomic Safety and Radiation Protection can order that the enterprises initiate research and development activities on atomic safety and radiation protection.

#### Provisions for Administrative Penalties

##### Section 30

(1) A reprimand or an administrative penalty of up to 500 marks may be imposed upon anyone who willfully or through negligence

1. impedes state monitoring activities as described in Section 6
2. does not fulfill or comply with directions given within the scope of state monitoring in accordance with Section 6, Paragraph 6
3. does not take measures to provide dose monitoring of radiation-exposed personnel in accordance with Section 6
4. fails to secure radioactive substances or radiation equipment against unauthorized access in accordance with Section 16 or fails to document radioactive substances and radiation equipment
5. allows uncontrolled radioactive emissions or handles or disposes of radioactive emissions or wastes not in accordance with the stipulations of Section 17
6. fails to execute precautionary measures for preventing and combatting off-normal events in accordance with Section 26 or fails to report off-normal events to the State Bureau for Atomic Safety and Radiation Protection

(2) An administrative penalty of up to 1000 marks may be levied if, due to a willful administrative offense in accordance with Paragraph 1 above,:

1. severe damage is caused or could have been caused
2. crass disregard for the interests of society is evident
3. the order and security of the state or of the general public are greatly endangered or
4. if such noncompliance was repeated within a two-year period and punished with an administrative penalty

(3) Articles which are related to the administrative offense may be confiscated as the sole penalty or in conjunction with other penalties. Proof of state qualification may be withdrawn as the sole penalty or in conjunction with other penalties.

(4) Conducting administrative penalty proceedings shall be incumbent upon the State Bureau for Atomic Safety and Radiation Protection

(5) In the case of minor administrative offenses in accordance with Paragraph 1, the duly authorized inspectors and physicians of the State Bureau for Atomic Safety and Radiation Protection are empowered to give a warning and an administrative fine of up to 20 marks.

(6) The conducting of administrative penalty proceedings and the conferring of penalties are covered in the OWG (Ordnungswidrigkeitsgesetz = Administrative Offenses Act) of 12 January 1968 (see GESETZBLATT, Vol I, No 3, p 101).

#### Concluding Provisions

#### Section 31

##### Fees

As per the provisions of the order of 28 October 1955 concerning state administrative fees (GESETZBLATT, Vol I, No 96, p 787) in its second version of 28 November 1967 concerning state administrative fees (GESETZBLATT, Vol II, No 119, p 837) and the fee scale given in conjunction with this order, fees will be levied for the administrative activities and services performed by the State Bureau for Atomic Safety and Radiation Protection as prescribed in this order.

#### Section 32

##### Appeal Procedures

(1) Appeals against the directives of Section 6, Paragraph 6 can be made to the president of the State Bureau for Atomic Safety and Radiation Protection. The appeal shall be in writing, shall provide substantiation and shall be submitted within two weeks following the decision. A decision concerning the appeal shall be made within two weeks of its submittal or immediately if the appeal concerns a shutdown. The decision of the president of the State Bureau for Atomic Safety and Radiation Protection is final.

(2) If in isolated cases no decision can be made within the specified period, an interim statement shall be issued promptly giving the reasons for the delay and indicating when a final decision can be expected. Decisions concerning appeals shall be in writing, shall provide substantiation and shall be handed over or mailed to the appellant. An appeal shall have the effect of deferring action unless immediate danger to the health of the employees has made deferred action impossible at the time the conditions are imposed.

## Section 33

### Implementing Decrees

Decrees for implementing this order shall be issued by the president of the State Bureau for Atomic Safety and Radiation Protection.

## Section 34

### Transitional Provisions

Authorizations, approvals and state qualifications and certifications which were issued before this order was in force shall retain their validity.

## Section 35

### Entry into Force

(1) This order shall enter into force on 1 February 1985.

(2) Expiring at the same time shall be:

1. the order of 26 November 1969 concerning protection against the harmful effects of ionizing radiation--radiation protection order--(GESETZBLATT, Vol II, No 99, p 627).
2. the first implementing decree of 26 November 1969 of the radiation protection order (GESETZBLATT, Vol II, No 99, p 635).
3. the directive of 9 May 1972 concerning monitoring of individual doses of radiation to personnel in jobs involving radiation exposure and to individual persons or groups of persons in the general population (GESETZBLATT, Vol II, No 29, p 346).

Berlin, 11 October 1984

The Council of Ministers of the German Democratic Republic  
W. Stoph  
Chairman

## Appendix

to the above order

### Terminology

1. Primary limit values:  
Limit values for the annual effective equivalent dose, the annual equivalent dose in organs and tissue and, in the case of internal radiation, for the 50 year consequent equivalent dose.
2. Secondary limit values:  
Limit values for equivalent doses of external radiation and for the maximum permissible annual intake of internal radiation used in place of the primary limit values which are directly applicable only in exceptional cases.
3. Derived limit values:  
Limit values for radiation field variables which can be directly measured or calculated, or amounts or concentrations of radionuclides which can be derived from the primary or secondary limit values using model assumptions.
4. Authorized limit values:  
Limit values which are stipulated in legal provisions or within the scope of the authorization process.
5. Operating limit values:  
Limit values which are stipulated for radiation protection within the enterprise.
6. Reference threshold values:  
Threshold values for measured variables or values derived from measured variables which when exceeded initiate certain actions (recording, investigation and intervention thresholds).
7. Licensing limits for radioactive substances:  
Radioactivity or radioactive concentration of substances containing radionuclides below which substances are not considered radioactive according to this order.
8. Equivalent dose:  
The equivalent dose  $H$  measured in Sieverts is defined as  
$$H = Q \times D$$
$$D$$
 is the energy dose measured in Grays and  $Q$  is the quality factor. In terms of practical radiation protection it can be said that  
for photons, electrons and positrons  $Q = 1$   
for neutrons, protons and particles with a single charge whose rest mass is greater than one atomic mass unit  $Q = 10$   
for alpha particles and particles with a multiple charge  $Q = 20$

9. Effective equivalent dose:

The effective equivalent dose  $H_E$  is defined as

$$H_E = \sum_T W_T \times H_T$$

where

$H_T$  = the mean equivalent dose in the organ or tissue T, averaged over the entire organ and

$W_T$  = the weighting factor for the organ or tissue T.

The weighting factors for the organs or tissues are:

| Organ or tissue       | $W_T$ |
|-----------------------|-------|
| Gonads                | 0.25  |
| Breasts               | 0.15  |
| Red bone marrow cells | 0.12  |
| Lungs                 | 0.12  |
| Thyroid gland         | 0.03  |
| Bones (surface)       | 0.03  |
| Other organs          | 0.30  |

10. 50 year consequent equivalent dose:

The equivalent dose for a given organ or tissue as the result of a one-time uptake of a radioactive substance into the body which accumulates over 50 years following uptake.

11. Organ dose:

The maximum equivalent dose in an organ, organ system or tissue may be averaged over that part of the organ in which non-stochastic radiation effects may become apparent.

12. Surface dose:

The maximum equivalent skin dose at a depth of 7 mg/cm<sup>2</sup> or in the case of photon radiation at a greater depth if the maximum dose is first reached there due to build-up of the secondary electron field.

<sup>1</sup> In order to determine the contribution of the other organs to the effective equivalent dose, the mean equivalent dose for the five other most strongly irradiated organs (with the exception of the lens of the eye, skin, hands, lower arms, feet and ankles) is determined using a weighting factor of 0.06 for each of these other organs. The contribution of other organs not taken into account in determining the effective equivalent dose is disregarded.



13. Radioactive material:  
A radioactive substance, whose radioactivity is used (with the exception of its use on human beings) or which is created through the operation of nuclear installations or radiation equipment and whose radioactivity and radioactivity concentration exceed the stipulated licensing limits.
14. Radiation-contaminated material:  
A radioactive substance which is used as a raw material or a semi-finished or finished product while not utilizing its radioactivity and whose radioactivity concentration exceeds the stipulated licensing limit for radiation-contaminated material.
15. Radioactive raw materials:  
A radioactive substance which as a raw material contains the minerals uranium or thorium and from which nuclear material can be produced using physical and chemical processes and whose radioactivity and relative percentage by mass of uranium and thorium exceeds the stipulated licensing limits for radioactive raw material.
16. Radioactive emissions:  
A radioactive substance which in conjunction with water or air is released into the environment or which is placed in the environment in solid form and whose radioactivity concentration exceeds the stipulated licensing limits for radioactive emissions.
17. Radioactive waste:  
A radioactive substance which for scientific, technical and economic reasons is of no further use and which must be disposed of such that it is isolated from the environment and whose radioactivity and radioactive concentration exceed the stipulated licensing limits for radioactive waste.
18. Radiation-contaminated foodstuffs:  
A radioactive substance which is considered a foodstuff according to the Foodstuffs Act and whose radioactivity and radioactive concentration exceed the stipulated licensing limits for radiation-contaminated foodstuffs.
19. Radioactive drugs and radionuclide-tracered drugs:  
A radioactive substance which is a type of drug in accordance with the Medical Preparations Act and whose radioactivity exceeds the stipulated licensing limits for radioactive drugs and radionuclide-tracered drugs.
20. Radiation-exposed personnel:  
Persons employed in radiation protected areas, not including persons who enter these areas only rarely in order to perform specialized tasks, whose exposure to radiation cannot exceed the limit values for individual persons among the general population.
21. Operating personnel:  
Employees who operate or maintain nuclear installations or radiation

equipment and thus have an effect upon atomic safety and radiation protection even if they are not considered radiation-exposed personnel.

22. Stochastic radiation damage:  
Damage whose probability of occurrence increases with radiation exposure and whose degree of severity does not depend upon dose.
23. Nonstochastic radiation damage:  
Damage whose degree of severity increases with radiation exposure and which is first clinically ascertainable above certain radiation exposure values.
24. Off-normal event:  
A deviation from the intended course or conditions of operation whereby impermissible radiation exposure occurs or can occur or nuclear safety is no longer assured or can no longer be assured.

#### Performance Specification for Order on Ensuring Atomic Safety and Radiation Protection of 11 October 1984

Based on Section 33 of the 11 October 1984 order for ensuring atomic safety and radiation protection (GESETZBLATT, Vol I, No 30, p 341), the following has been determined:

Re Section 3, Paragraph 3 of the Order:

#### Section 1

##### Tasks of the Authorized Employee

(1) The managerial staff member employed as the authorized employee shall be responsible for the following tasks in particular in the area of radiation protection:

1. Arranging for radiation protected areas
2. Designating radiation-exposed employees
3. Conducting training and in-plant radiation protection courses
4. Planning and organizing radiation protection measures for given tasks
5. Drawing up the in-plant radiation protection order or radiation protection instructions
6. Providing direct instruction to radiation-exposed personnel
7. Ordering medical, dosimetry and individual dosimetry supervision and maintaining written records thereof
8. Requiring the provision of necessary individual protection equipment and ensuring its use
9. Permitting only the use of radiation equipment, protective equipment and measuring equipment which is in technically perfect working order, and providing for proper inclusion of the measuring equipment in the in-plant measurement system
10. Enforcing precautionary measures for preventing off-normal events

11. Guarding radioactive substances and radiation equipment against unauthorized access, monitoring the inventory thereof for completeness and keeping written records of the inventory
12. Requiring inspection of the leaktightness of enclosed radiation sources
13. Informing the immediate supervisor and the radiological safety officer in the case of inadequate radiation protection and taking steps to eliminate the problem
14. Arranging for revision of the authorization in the case of changes in personnel or material requirements.

(2) The staff member engaged as the authorized employee shall fulfill the following tasks in the area of radiation protection in accordance with Paragraph 1, Nos 5 through 14.

Re Section 4 of the Order:

## Section 2

The procedures for granting the authorization in accordance with Paragraphs 3 through 14 of this performance specification do not cover the use of nuclear installations, mining activities where radioactive substances are present or the processing of radioactive raw materials and the use of the resulting radiation-contaminated material.

Re Section 4, Paragraph 3 of the Order:

## Section 3

Documents Required for Issuing the Permit

The application for a permit shall designate

1. the director of the enterprise
2. the authorized employee and the radiological safety officer giving their qualifications
3. the work planned
4. the type and the radioactivity level or the amount of radioactive substances, the type and number of pieces of radiation equipment or enclosed radiation sources
5. the work rooms, and
6. the in-plant radiation protection order including the plans for counter-acting off-normal events shall be submitted in duplicate.

Approval is based on the above information and documents.

Re Section 4, Paragraph 4 of the Order:

## Section 4

Consent

In order to obtain consent for the individual stages in the employment of radiation equipment and contact with radioactive substances or for partial projects or special tasks, the State Bureau for Atomic Safety and Radiation Protection shall be consulted at the earliest possible point in the planning stage.

## Section 5

### Site Consent

(1) Consent is required as to the site for enterprises, buildings and installations which release radioactive substances into the environment or which can contribute in some way to radiation exposure within the environment to individual persons within the general population.

(2) The operation of radiation equipment and the use of radioactive substances in private residences is permitted only under special, restricted conditions which shall be stipulated in the consent document.

## Section 6

### Consent for Project Objective

(1) Project objectives used in the preparation of investments for buildings, rooms and installations in which the use of radiation equipment or contact with radioactive substances is planned require consent.

(2) The type and scope of the documents to be submitted for consent shall be stipulated by the State Bureau for Atomic Safety and Radiation Protection.

## Section 7

### Consent for Project

Consent must be obtained for plans for buildings, rooms and installations in which the use of radiation equipment or contact with radioactive substances is planned. The following documents shall be submitted with the application:

1. Description of the project and the technology involved
2. Description of structural details
3. Description of radiation protection and safety-related technologies
4. Radiation protection calculations
5. Information on the type, radioactivity or amount of radioactive substances or the type of radiation equipment and its operating parameters
6. Drawings such as the site plan, layouts and cross sections, as well as documents showing the ventilation layout, plumbing, monitoring equipment and other types of equipment
7. Documentation of measures concerning the health and safety of the workforce and fire protection measures

The State Bureau for Atomic Safety and Radiation Protection can require additional documents, particularly those for optimizing radiation protection

measures. The documents shall be submitted in duplicate to the State Bureau for Atomic Safety and Radiation Protection which will retain one copy.

## Section 8

### Consent for Shutdown

- (1) Facilities or work areas in which radiation equipment is operated, which contain radioactive substances or in which there is contact with radioactive substances and for which a permit must be obtained also require consent for shutdown.
- (2) The application for shutdown consent must be accompanied by proof that
  - radioactive substances and radiation equipment are disposed of or transferred properly
  - work areas, equipment and installations are adequately decontaminated
  - radiation protection is ensured during shutdown
- (3) Further use of such work areas, equipment and installations requires a release by the State Bureau for Atomic Safety and Radiation Protection which may empower the radiological safety officer to grant such a release.
- (4) The shutdown of radiation equipment containing no radioactive substances shall be reported to the State Bureau for Atomic Safety and Radiation Protection stating what will be done with the equipment.

## Section 9

### Consent for Partial Projects and Special Tasks

Consent is required for partial projects and special tasks involving new technologies, industrial experiments or short-term work, for example, in which the operation of radiation equipment or contact with radioactive substances is planned. The type and scope of the documents to be submitted corresponds to those described in Section 7. The consent document is an integral part of the permit issued.

## Section 10

### Consent for Importation

- (1) Each importation order for radiation equipment or enclosed radiation sources requires consent if no approval in accordance with Section 5 of the order is on file. The application shall be made by the importing enterprise and shall be accompanied by the following information:
  - technical documentation indicating design and function
  - purpose
  - type of operation planned
  - radiation protection approval or similar documents from the country of origin
  - enterprise proposed for performance of maintenance work

(2) The import contract may be concluded only after consent for importation is granted.

#### Section 11

##### Modifications

An application to modify the permit must be submitted before any changes in the personnel or equipment requirements can be implemented.

#### Section 12

##### Official Inspection

Before a permit is issued, equipment, processes and work areas involved in the operation of radiation equipment and contact with radioactive substances shall undergo an official inspection by the State Bureau for Atomic Safety and Radiation Protection with a view to ensuring radiation protection. The radiological safety officer or the authorized employee may be empowered to conduct the official inspection.

Re Section 4, Paragraph 5 of the Order:

#### Section 13

##### Licensing

(1) Contact with enclosed radiation sources or operation of radiation equipment can be licensed if

- standardized working documents approved by the State Bureau for Atomic Safety and Radiation Protection are on file, in particular the radiation protection plans, the operating manual and the in-plant radiation protection order
- proof is supplied that operation shall be in accordance with the working documents
- an authorized employee is named and
- an official inspection shows compliance with radiation protection requirements

(2) Stomatological x-ray equipment and measurement and control equipment using enclosed radiation sources are subject to licensing if so stated in the radiation protection type approval.

(3) The documents stipulated within the scope of the radiation protection type approval shall bear the official inspection stamp of the authorized employee and shall be submitted in duplicate to the State Bureau for Atomic Safety and Radiation Protection. A copy with the licensing stamp will be sent back to the enterprise.

(4) The license is specific for

1. the enterprise
2. the authorized employee
3. the project
4. the type, radioactivity level and amount of radioactive substances or the type and radioactivity of enclosed radiation sources and the type and characteristic data of the radiation equipment in addition to the quantity
5. the work areas

(5) Changes in personnel or equipment upon which the licensing is based and the shutdown of licensed radiation equipment and enclosed radiation sources shall be reported to the State Bureau for Atomic Safety and Radiation Protection within 14 days.

Re Section 4, Paragraph 6 of the Order:

#### Section 14

##### Registration

(1) The following are subject to registration if so stated in the radiation protection type approval

- radiation sources for display monitoring of radiation measuring equipment
- radiation sources for instructional purposes
- radiation equipment for instructional purposes and
- flue gas ionization detectors

(2) Registration shall be in the form of written notification to the State Bureau for Atomic Safety and Radiation Protection using a standardized form filled out by the enterprise. Unless otherwise stipulated the acquisition of objects requiring registration shall be reported to the State Bureau for Atomic Safety and Radiation Protection within four weeks.

Re Section 4, Paragraph 7 and Section 5 of the Order:

#### Section 15

##### Authorization for Special Radiation Equipment

No permit, license, registration or type approval is required for the use of radiation equipment whose acceleration voltage for charged particles does not exceed 5 kV.

Re Section 6, Paragraph 2 of the Order:

#### Section 16

##### Scope of Authority and Tasks of Inspectors and Authorized Physicians

(1) The inspectors of the State Bureau for Atomic Safety and Radiation Protection are authorized:

1. to enter buildings, rooms, installations, laboratories and other work areas at any time in the performance of their duties and to conduct tests and measurements or take samples, whereby the legal provisions and in-plant stipulations regarding the health and safety of the workforce and fire protection shall be observed in every case
2. to view atomic safety and radiation protection documents or to require that they be supplied, to request information and estimates and to prepare the necessary documentation
3. to demand of the directors of enterprises and authorized employees that they eliminate any deficiencies affecting atomic safety and radiation protection
4. in the case of severe violations of the legal provisions regarding atomic safety and radiation protection or of immediate danger to persons or objects in the environment, to instruct the directors of enterprises to cease operation or halt the activities of radiation-exposed personnel and operating personnel or to close off rooms or installations
5. in the case of off-normal events to give directions for initiating absolutely necessary actions for preventing hazards to life and health or to minimize major damage, insofar as the enterprise is not able to take these measures itself
6. to require that the director of the enterprise initiate disciplinary action in the case of violations of the legal provisions and in-plant regulations or noncompliance with directives or orders, to issue a warning with a fine in accordance with Section 30, Paragraph 5 of the order or to suggest to the president of the State Bureau for Atomic Safety and Radiation Protection that administrative penalty proceedings be initiated in accordance with Section 30 of the order.

(2) The authorized physicians of the State Bureau for Atomic Safety and Radiation Protection are empowered:

1. to monitor physicians specializing in health physics with regard to their radiological supervision of radiation-exposed personnel and operating personnel
2. to view health-related documents for radiation-exposed personnel and operating personnel
3. to order medical examinations at the State Bureau for Atomic Safety and Radiation Protection or in health facilities stipulated for that purpose and to introduce expert or decisive expert medical opinions concerning radiation protection.



(3) The director of the enterprise shall be informed immediately in the case of directives issued or measures taken in accordance with Paragraph 1, No 5 and Paragraph 2, No 3.

Re Section 6, Paragraph 3 of the Order:

Individual Dose Monitoring by the State

#### Section 17

(1) Individual dose monitoring of external radiation exposure to radiation-exposed personnel in categories A and B in accordance with Section 31 shall be conducted and evaluated using personnel dosimeters provided by the State Bureau for Atomic Safety and Radiation Protection. The personnel dosimeters are normally worn on the right-hand side of the upper chest. If x-ray protective clothing is worn, the personnel dosimeters shall be worn under this protective clothing.

(2) The dosimeters of radiation-exposed personnel in category A shall be evaluated once a month. The dosimeters of radiation-exposed personnel in category B may be evaluated at longer intervals.

(3) Stipulations regarding the intervals between evaluations of the personnel dosimeters and the monitoring of other persons for external radiation exposure shall be made when the authorization is granted.

#### Section 18

Individual dose monitoring for internal radiation exposure in radiation-exposed personnel, particularly those who work in Class I and Class II work areas in accordance with Section 34 and in nuclear installations, shall be conducted by the State Bureau for Atomic Safety and Radiation Protection using whole-body measurements or measurements of human waste samples. The State Bureau for Atomic Safety and Radiation Protection may also delegate these tasks to the enterprise. The type and scope of monitoring activities depend on the type of work planned and on the results of the monitoring measurements taken in accordance with Section 21. In special cases the State Bureau for Atomic Safety and Radiation Protection may stipulate that the internal radiation exposure be determined based on measurement of the radioactivity concentration of the air at representative work areas.

#### Section 19

(1) Radiation-exposed personnel shall be informed as to the results of individual dose monitoring. The amount of radiation exposure determined in individual dose monitoring shall be evaluated by the authorized employee together with the radiation-exposed employee and shall be recorded in an exposure card file. Dosage figures for individual persons which fall below the recording threshold shall not be included in determining individual radiation exposure.

(2) If radiation-exposed personnel are employed in radiation protected areas in other enterprises, the enterprise which sends them there shall ensure that individual dose monitoring takes place and that the results of monitoring are recorded.

## Section 20

(1) The following data shall be supplied to the State Bureau for Atomic Safety and Radiation Protection regarding employees subject to individual dose monitoring:

1. surname, surname at birth, first name
2. personal identity number
3. occupation trained for, current occupational activities
4. beginning of activities subject to monitoring; other enterprises in which prior individual dose monitoring occurred
5. type of work, type and quality of radiation or type of radioactive substances, as well as the characteristic data regarding handling these substances at the workplace.

(2) The State Bureau for Atomic Safety and Radiation Protection shall inform the enterprise as to prior activities involving radiation exposure.

(3) Termination of the activities of employees subject to individual dose monitoring shall be reported to the State Bureau for Atomic Safety and Radiation Protection. The results of individual dose monitoring shall be kept on file at the State Bureau for Atomic Safety and Radiation Protection for 50 years following termination of the work.

Re Section 7, Paragraph 1 of the Order:

## Section 21

### Monitoring Measurements

(1) Enterprises in which atomic energy is used shall comply with legal provisions concerning in-plant measurements and must have available all measurement equipment necessary for ensuring proper in-plant monitoring. The measurement results shall be recorded, evaluated and kept on file.

(2) Fully functional, calibrated measuring devices which are appropriate for the given measurement task shall be used for making the monitoring measurements. The stipulations of the Standardization, Measurement and Commodity Testing Office shall be observed in the inspection of measurement equipment by the state or enterprise.

(3) Measurements shall be made at regular intervals and when modifications are made which could have a significant effect on the radiation protection situation, as well as in the case of off-normal events. Stipulations in this regard shall be made in the in-plant radiation protection order.

(4) In order to evaluate the radiation protection situation, local doses and local dose rates shall be measured in radiation protected areas and adjoining areas. The operation of nuclear installations and of radiation equipment containing enclosed radiation sources or capable of producing radioactive substances, as well as contact with radioactive substances, require in addition the employment of measurement equipment and processes which permit determination of the surface contamination and radioactivity concentrations in the air and water or testing for leaktightness of the enclosed radiation sources.

(5) The release of radioactive substances into the environment with vented air or wastewater or by any other means shall be monitored with measuring equipment. The results shall be recorded and kept on file.

(6) If necessary in order to determine or limit individual radiation exposure, personnel dosimeters, individual dose rate alarms or procedures for determining individual uptake shall be employed. Stipulations in this regard shall be made when the permit is issued.

(7) Persons and objects shall be checked for contamination upon leaving radiation protected areas in which unenclosed radioactive substances are handled or in which unenclosed radioactive substances may be present.

(8) For well-founded reasons estimates may be used in place of monitoring measurements. Such procedures require approval by the State Bureau for Atomic Safety and Radiation Protection.

(9) Stipulations regarding filing of the measurement results shall be made in legal provisions or when the authorization is granted.

Re Section 7, Paragraphs 2 and 3 of the Order

## Section 22

### Rights and Duties of the Radiological Safety Officer

(1) The radiological safety officer shall monitor compliance with the radiation protection regulations in the area for which he is responsible. He shall advise the director of the enterprise in matters of radiation protection and monitor the managerial staff and authorized employees with regard to the fulfillment of their duties.

(2) The radiological safety officer shall have the right to enter all work areas and facilities within his area of responsibility at any time for the purpose of radiation protection monitoring, to demand information, reports and estimates regarding radiation protection and to have access to all documents relating to radiation protection.

(3) The radiological safety officer shall conduct regular inspections within his area of responsibility and shall report to the director of the enterprise at least once a year regarding the radiation protection situation. Stipulations regarding the number and scope of the inspections shall be made when the permit is issued.

(4) The radiological safety officer shall keep an inspection log in which all inspections, any deficiencies found, measures taken to correct them, the deadline for correcting them and any special occurrences are recorded.

(5) The radiological safety officer shall be included in the planning and preparation of new work activities which relate to matters of radiation protection. He shall be consulted in naming the radiation-exposed personnel and shall approve the in-plant radiation protection order.

(6) In the case of deficiencies found regarding radiation protection or any violations of radiation protection regulations the radiological safety officer shall order the managerial staff to correct the deficiencies by a specific deadline and to comply with radiation protection regulations.

(7) In the case of an immediate danger to persons or property the radiological safety officer shall place rooms, equipment or facilities off limits. Such measures shall be brought immediately to the attention of the director of the enterprise and the State Bureau for Atomic Safety and Radiation Protection.

(8) If so requested, the radiological safety officer shall report on monitoring activities and shall submit estimates, expert opinions or statements concerning problems connected with his activities as radiological safety officer to the State Bureau for Atomic Safety and Radiation Protection.

(9) The work-related tasks of the radiological safety officer, as well as his rights and duties, shall be stipulated in a function plan. If the radiological safety officer fulfills this function only on a part-time basis in addition to other duties, his duties as radiological safety officer shall have priority over his other obligations.

(10) The rights and duties of atomic safety inspection officials are set forth in legal provisions.

Re Section 8 of the Order

Section 23

Radiological Fitness Tests and Routine Checkups, Physicians Specializing in Health Physics

(1) Radiation-exposed personnel and operating personnel shall undergo radiological fitness tests and routine checkups before taking up their duties, while performing their duties and following any off-normal events. The directors of the enterprises shall ensure participation in the examinations.

(2) Physicians specializing in health physics shall be employed by the director of the Department of Health and Social Services of the Bezirk Council (bezirk physician) as recommended by the Directors of Labor Hygiene Inspections for the Bezirk Councils and shall be appointed by the State Bureau for Atomic Safety and Radiation Protection. These physicians shall be assigned to the enterprises by the Directors of Labor Hygiene Inspections for the Bezirk Councils at the request of the directors of the enterprises. The area of responsibility of these physicians does not include acting as the authorized employee. These physicians shall be medical specialists in health physics with state certification from the State Bureau for Atomic Safety and Radiation Protection.

Re Section 10 of the Order:

#### Section 24

##### Justification Procedures

Justification for a given type of atomic energy use shall be based on the valid legal provisions for preparation of an investment project, production startup or importation. The radiation hazards to be taken into account shall be determined within the scope of the approval process by the State Bureau for Atomic Safety and Radiation Protection. If no approval is required, this determination shall be made within the scope of issuing the permit.

Re Section 11 of the Order:

#### Section 25

##### Primary Limit Values

(1) In the use of atomic energy the following primary limit values are valid for individual radiation exposure to radiation-exposed personnel over a period of 12 consecutive months:

- 50 mSv as the effective equivalent dose
- 500 mSv as the equivalent dose for organs and tissue and
- 150 mSv as the equivalent dose for the lens of the eye

In the case of uptake the 50-year consequent equivalent dose shall replace the equivalent dose. For women under 45 years of age there shall be an additional limit value of 13 mSv for the equivalent dose to the uterus during three consecutive months.

(2) When atomic energy is used, the limit value for the effective equivalent dose of annual individual radiation exposure to isolated persons among the general population shall be 5 mSv and the limit value for the equivalent dose to organs and tissue shall be 50 mSv. In addition, it must be ensured that the average value for the annual effective equivalent dose is limited to 1 mSv over a period of 50 years.

## Section 26

### Secondary Limit Values

(1) In the case of external radiation exposure the limit values in accordance with Section 25, Paragraph 1 are considered in compliance if the following secondary limit values are observed:

- 50 mSv annually in the case of photon radiation levels of 10 keV to 10 MeV as the maximum surface dose to the head and torso.  
For women under 45 years of age it shall be 13 mSv during three consecutive months.
- 50 mSv annually in the case of neutron radiation up to 20 MeV as the maximum equivalent dose assuming the reference conditions given in the table in Appendix 1.  
For women under 45 years of age, 13 mSv during three consecutive months.
- 500 mSv per year in the case of photon radiation of 10 keV to 10 MeV and neutron radiation up to 20 MeV as the maximum equivalent dose to the hands.
- 500 mSv per year in the case of photon radiation below 10 keV and for beta radiation as the maximum surface dose, and
- 150 mSv per year for the lens of the eye.

The secondary limit values for radiation energies exceeding the above values and for other types of radiation shall be stipulated when the authorization is granted.

(2) The basis for calculation and the guidelines for taking measurements which are used to prove compliance with the secondary limit values given in Paragraph 1 shall be stipulated in standards. Compliance with the limit values can also be proven using the radiation exposure levels indicated on the personnel dosimeters used in state monitoring.

(3) In the case of internal radiation exposure the limit values in accordance with Section 25, Paragraph 1 are considered in compliance if the limit values for the maximum permissible annual uptake, ALI, by inhalation and ingestion, given in Appendix 2, Table 1, Columns 3 and 4, are not exceeded.

(4) The following is valid for a radionuclide mixture whose composition by percent is known:

$$\frac{1}{\text{ALI}_{\text{Gem}}} = \sum_{i=1}^n \frac{p_i}{\text{ALI}_i}$$

where

- $ALI_{Gem}$  = the limit value for the maximum permissible annual uptake for the radionuclide mixture  
 $P_i$  = the percentage of  $i$  radionuclides in relation to the overall radioactivity of the mixture  
 $ALI_i$  = the limit value for the maximum permissible annual uptake of the  $i$  radionuclide  
 $n$  = the number of radionuclides in the mixture

(5) In the case of combined internal and external radiation exposure the primary limit values for radiation-exposed personnel are considered in compliance if the following conditions are met at the same time:

$$\frac{H_d}{50 \text{ mSv}} + \sum_{j=1}^n \frac{I_j}{ALI_j} \leq 1$$

$$\frac{H_s}{500 \text{ mSv}} \leq 1$$

where

- $I$  = the maximum permissible annual uptake of  $j$  radionuclides  
 $ALI_j$  = the limit value for the maximum permissible annual uptake of  $j$  radionuclides  
 $H_d$  = the maximum surface dose to the torso of photon radiation in the range of 10 keV to 10 MeV or the maximum equivalent dose for neutrons up to 20 MeV under the reference conditions given in Paragraph 1  
 $H_s$  = the surface dose for photon radiation below 10 keV and for beta radiation

(6) For external radiation to individual persons among the general population the secondary limit values shall be 1/10 of the limit values given in Paragraph 1, and for the lens of the eye the limit value shall be 50 mSv per year. The additional requirements in Section 25, Paragraph 2 shall be valid as applicable.

(7) The limit values for internal radiation exposure to individual persons among the general population shall be 1/100 of the values given in Paragraph 3 if no other stipulations have been made in legal provisions or in granting the authorization. If only adults are affected, 1/10 of the given values, or 1/50 as the average value over a period of 50 years, shall be acceptable.

(8) Paragraph 5 shall apply accordingly for combined external and internal radiation exposure to individual persons among the general population.

## Section 27

### Derived Limit Values

(1) If derived limit values are given for the mean value of a parameter over a certain period of time, the actual value of the limited parameter may deviate somewhat from this mean value over shorter time periods.

(2) In the case of external photon radiation with photon energy levels of up to 3 MeV, derived limit values may be given as free-air energy doses or dose rates based on secondary electron equilibrium. Air, water or soft tissue are permissible as reference substances for determining the energy dose. In deriving limit values an equivalent dose in Sv may take the place of the free-air energy dose measured in Gy.

(3) The limit value for the average annual radioactivity concentration in air, DAC, is equal to the radioactivity of one radionuclide in air

- which at a breathing rate of  $1.2 \text{ m}^3 \text{ h}^{-1}$  within a working year comprising 2000 hours leads to an annual radioactivity uptake equal to the ALI or
- which in the case of submersion within one working year comprising 2000 hours leads to a radiation exposure level corresponding to the limit values given in Section 25, Paragraph 1.

Also:

- for all radionuclides excluding noble gases,  $\text{DAC}^{*)} = \text{ALI}/2400$  in  $\text{Bq m}^{-3}$  with ALI for inhalation in accordance with Appendix 2, Table 1, Column 3, and
- for noble gases, the DAC for submersion given in Appendix 2, Table 2, Column 3 shall be valid.

(4) For the DAC of radionuclide mixtures of known composition by percent Section 26, Paragraph 4 shall be valid as applicable.

(5) If no further stipulations are made in legal provisions or in granting the authorization, the primary limit values for individual persons among the general population shall be considered in compliance if the average annual radioactivity concentration in air does not exceed

- 1/100 DAC for all radionuclides excluding noble gases
- 1/40 or, as an average annual value over a period of 50 years, 1/200 of the values given in Appendix 2, Table 2, Column 3a for noble gases.

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\*) External radiation exposure is not reflected in this value



(6) For surface contamination the limit values given in Appendix 2, Table 3 shall apply. For tritium the values given in Table 3 for  $\beta$  surface contamination shall be multiplied by a factor of 100. In complying with the limit values for surface contamination the radiation exposure caused by this contamination need not be taken into account in the proof of limit value compliance as per Section 25.

(7) Based on analyses of work areas which produce specific exposure level models, divergent limit values for surface contamination may be derived and authorized by the State Bureau for Atomic Safety and Radiation Protection.

## Section 28

### Licensing Limits

(1) The following options apply to radioactive materials:

- The values given in Appendix 2, Table 1, Column 5 as the licensing limits for radioactivity. If several radionuclides are present at the same time, the following condition must be met:

$$\sum_{i=1}^n \frac{A_i}{F_i} \leq 1$$

where

$A_i$  = the radioactivity of the  $i$  radionuclide

$F_i$  = the licensing limit for the  $i$  radionuclide

$n$  = number of simultaneously existing radionuclides

- 100 Bq/g or, in the case of solid, naturally occurring radioactive substances, 500 Bq/g as the licensing limits for the radioactivity concentration.

(2) For radiation-contaminated material the licensing limit shall be a radioactivity concentration of 0.2 Bq/g. If this material contains only radionuclides of the natural radioactive decay chain in radioactive equilibrium, this value shall be valid for radium.

(3) For radioactive source material the licensing limit shall be either 5 MBq for the radioactivity or 0.01 percent for the relative portion of its mass which comprises uranium or thorium.

(4) The licensing limits regarding radioactivity concentrations in radioactive emissions are as follows:

- discharge into the common sewer system:
  - for radionuclides with a half-life of  $\leq 60$  days
  - per each  $\text{m}^3$  of emissions, the ALI according to Appendix 2, Table 1, Column 4 and Section 26, Paragraph 4
  - for radionuclides with a half-life of  $> 60$  days
  - per each  $\text{m}^3$  of emissions, 1/10 of the ALI according to Appendix 2, Table 1, Column 4 and Section 26, Paragraph 4
- discharge into open water
  - for each  $\text{m}^3$  of emissions, 1/100 of the ALI according to Appendix 2, Table 1, Column 4 and Section 26, Paragraph 4
- release into atmosphere
  - radionuclides excluding noble gases
  - emissions of 1/10 of the DAC according to Section 27, Paragraphs 3 and 4
  - noble gases
  - emissions of 1/10 of the DAC for submersion according to Appendix 2, Table 2, Column 3a and Section 27, Paragraph 4
- storage of solid wastes
  - 0.2 Bq/g
  - If this material contains only radionuclides of the natural radioactive decay chain in radioactive equilibrium, this value shall be valid for radium.

The weekly emission levels resulting from the use of nuclear installations or radiation equipment or from contact with radioactive material may also not exceed the values stipulated in Appendix 2, Table 1, Column 5.

(5) The licensing limits for radioactive material are also valid for radioactive wastes.

(6) In the case of radiation-contaminated foodstuffs, the licensing limit shall be a radioactivity concentration which amounts to  $5 \times 10^{-3}$  times the values given in Appendix 2, Table 1, Column 4 and Section 26, Paragraph 4, divided by the average annual per capita consumption in kg of the foodstuff in question.

(7) For radioactive drugs and radionuclide-tracered drugs the licensing limit shall be a radioactivity concentration of  $10^{-8}$  times the values given in Appendix 2, Table 1, Column 3 per gram.

(8) The licensing limits stipulated in Paragraphs 1 through 7 shall be valid depending on the type of application. The establishment of licensing limits shall not affect any permit issued by other state agencies, in particular the permit regarding the discharge of wastewater into open water issued by the authorized Directorate of Water Management or the permit regarding discharge into the sewer system issued by the authorized VEB Water Supply and Wastewater Treatment.

Re Section 12 of the Order:

Section 29

Optimization

(1) Radiation protection measures shall be optimized within the scope of the approval procedures or in issuance of the permit, and the necessary documents shall be submitted to the State Bureau for Atomic Safety and Radiation Protection. Optimization shall be considered accomplished when the appropriate authorized limit values stipulated by the State Bureau for Atomic Safety and Radiation Protection or stipulations within standards, other legal provisions, guidelines or the authorization granted are in compliance.

(2) The enterprises shall under their own responsibility explore additional possibilities for optimization of radiation protection measures employed in the use of atomic energy and shall implement any measures resulting therefrom in order to reduce radiation hazards.

Re Section 13 of the Order:

Section 30

Radiation Exposure under Special Circumstances

(1) Radiation exposure due to special circumstances may not exceed the limit values given in Section 25, Paragraph 1 by a factor of 2 for a single exposure incident or by a factor of 5 over a person's lifetime.

(2) Thorough investigations and prior approval by the director of the enterprise are required before radiation exposure is permitted under special circumstances, and a report shall be made to the State Bureau for Atomic Safety and Radiation Protection. If special radiation exposure levels are planned, they must be approved by the State Bureau for Atomic Safety and Radiation Protection.

(3) Radiation-exposed personnel who are to be exposed to radiation under special circumstances shall be thoroughly trained in the activities to be performed, shall be informed of existing hazards and shall be instructed as to what measures can be employed to keep radiation exposure to a minimum. Radiation exposure under special circumstances requires the consent of the radiation-exposed personnel. The State Bureau for Atomic Safety and Radiation Protection, the physician specializing in health physics and the radiation-exposed personnel involved shall be informed of the radiation exposure levels which occurred.

(4) The following may not be exposed to radiation under special circumstances:

- radiation-exposed personnel who have been exposed to radiation levels during off-normal events which exceed the annual exposure limit described in Section 25, Paragraph 1 by a factor of 5
- women under 45 years of age

Re Section 14, Paragraph 1 of the Order:

#### Section 31

##### Categories for Radiation-Exposed Personnel

(1) Categories A and B are stipulated for radiation-exposed personnel:

1. Radiation-exposed personnel in Category A are exposed to conditions in which the radiation level may exceed 3/10 of the limit value in accordance with Section 25, Paragraph 1
2. Radiation-exposed personnel in Category B are exposed to conditions in which the radiation level may not exceed 3/10 of the limit value in accordance with Section 25, Paragraph 1

(2) Students and apprentices between the ages of 16 and 18 may be employed for training purposes only under conditions in which the radiation exposure does not exceed 1/10 of the limit values in accordance with Section 25, Paragraph 1. In exceptional cases approved by the State Bureau for Atomic Safety and Radiation Protection students and apprentices may be employed under conditions in which radiation exposure does not exceed 3/10 of the limit values in accordance with Section 25, Paragraph 1.

(3) Radiation exposure levels which may occur in the case of off-normal events shall not be taken into consideration in determining the categories for radiation-exposed personnel.

Re Section 15 of the Order:

#### Section 32

##### Characteristics of Radiation Protected Areas

(1) Radiation protected areas shall be established wherever radiation exposure levels may occur which exceed 1/10 of the limit values in accordance with Section 25, Paragraph 1 within a one-year period. The enterprise must have the authority necessary for implementing radiation protection measures in the case of radiation protected areas which extend beyond the plant boundaries.

(2) In accordance with practical considerations, radiation protected areas are divided into:

- Radiation Protected Area I in which within a period of one year radiation exposure levels may occur which exceed 3/10 of the limit values in accordance with Section 25, Paragraph 1, and

- Radiation Protected Area II in which within a period of one year radiation exposure levels may occur which do not exceed 3/10 of the limit values in accordance with Section 25, Paragraph 1, insofar as inclusion under Radiation Protected Area I is not necessary for the reasons given under (3) below.

(3) In the designation of radiation protected areas structural boundaries shall be utilized wherever possible.

(4) Radiation protected areas shall be clearly designated and radiation hazard warning signs shall be placed at the entrances. Measures shall be taken to prevent unauthorized or unintentional access to these areas. Any locations within radiation protected areas where particular radiation hazards exist shall be marked with warning signs. Time limits for remaining at these locations may be stipulated. In the case of contamination hazards, provisions shall be made for contamination monitoring, decontamination and exchanges of clothing.

(5) Access to radiation protected areas is only permitted to:

- radiation-exposed personnel in the performance of their professional duties
- medical patients receiving radiation treatments
- apprentices, students and other employees for qualification procedures under the conditions described in Section 31, Paragraph 2
- visitors under the conditions stipulated in granting the authorization. Visits are permitted only under conditions in which the radiation exposure level does not exceed 1/10 of the values in accordance with Section 25, Paragraph 2. Employees who must enter radiation protected areas only rarely for the purpose of performing special duties may be given the same status as visitors.

Re Section 16 of the Order:

### Section 33

#### Organizational Radiation Protection Measures

- (1) In handling radioactive substances only the absolutely necessary radioactivity levels and radionuclides with the shortest possible half-life shall be used. Radioactive substances may be present at the workplace only for as long as necessary to complete the work involved. Measures shall be taken to prevent contamination.
- (2) In radiation protected areas in which the possibility of uptake of radioactive substances into the human body exists, eating, drinking and smoking, the use of health care products and cosmetics, and other activities resulting in uptake are prohibited. With special arrangements drinking may be permitted. This ban does not apply to the extraction of radioactive source material.

(3) In the case of contact with radiation-contaminated material and radioactive source material, organizational and hygienic measures shall be taken to keep uptake of radioactive substances to a minimum.

#### Section 34

##### Labor Classifications

(1) Work areas in which unenclosed radioactive material is handled shall be divided into the following classifications depending on the licensing limits and radioactivity involved:

##### Licensing Limits for Radioactive Material

##### Radioactivity Limits for Work Areas

|              | <u>Class I</u> | <u>Class II</u> | <u>Class III</u> |
|--------------|----------------|-----------------|------------------|
| 5 kBq        | over 0.5 GBq   | up to 0.5 GBq   | up to 0.5 MBq    |
| 50 kBq       | over 5 GBq     | up to 5 GBq     | up to 5 MBq      |
| 50 kBq       | over 50 GBq    | up to 50 GBq    | up to 50 MBq     |
| $^3\text{H}$ | over 5 TBq     | up to 5 TBq     | up to 5 GBq      |

(2) Higher radioactivity levels may be approved in the permit for storage of unenclosed radioactive materials in work areas.

(3) Paragraphs 1 and 2 above do not apply to contact with radioactive source material.

(4) Requirements regarding the construction and equipping of work areas are stipulated in a separate document.

#### Section 35

##### Surface Contamination

(1) Surface contamination should not exceed the values stipulated in Appendix, 2, Table 3.

(2) If surface contamination exceeds

- the values given in Appendix 2, Table 3, Nos. 1 through 4 following repeated decontamination with a mild, wet decontamination agent
- or the values given in Table 3, Nos. 4 through 6, following repeated normal washing, or the values given in Table 3, No. 7, following decontamination using soap and a brush without causing damage to the skin,

further measures shall be determined following an evaluation of the expected radiation exposure levels taking into account in the broadest possible sense the actual exposure conditions. The guidelines of the State Bureau for Atomic Safety and Radiation Protection or the stipulations made in granting the authorization shall be followed.

## Section 36

### Examination of Enclosed Radiation Sources

- (1) Enclosed radiation sources shall be examined for damage, leak-tightness, contamination and compliance with the prescribed period of use.
- (2) Intervals between examinations, and the type of examination shall be stipulated in a separate document.
- (3) Depending on the work situation, examinations at more frequent intervals may be required in order to ensure leak-tightness and prevent contamination.
- (4) If examinations indicate that enclosed radiation sources are damaged, contaminated or not leak-tight, the stipulations for handling off-normal events shall be followed.
- (5) Radioactive substances whose requirements correspond to those of enclosed radiation sources shall be equated with enclosed radiation sources.

Re Section 16, Paragraph 2 of the Order:

## Section 37

### Protection Equipment

Workplaces and equipment employed in the use of atomic energy shall be adequately outfitted with the technical facilities to prevent unintentional radiation exposure (protection equipment). Protection equipment shall be designed to be redundant and failsafe and shall be tested for effectiveness at regular intervals. A record shall be kept of these tests. In the case of deficiencies the authorized employee in conjunction with the radiological safety officer shall decide if and under what conditions operation may continue. Protection equipment may not be permanently removed or made ineffective during repair and maintenance work.

## Section 38

### Maintenance

The directors of enterprises in which radiation equipment is used shall ensure their proper maintenance. Technical inspections shall be made within the time period stated in the radiation protection type approval by the enterprise which has a permit for the performance of repair and maintenance work issued by the State Bureau for Atomic Safety and Radiation Protection.

Re Section 16, Paragraph 3 of the Order:

#### Section 39

##### Radiation Protection Order

(1) Taking into account actual conditions and the tasks to be performed, the in-plant radiation protection order shall stipulate the legal provisions regarding work procedures, labor organization, maintenance technology and radiation protection monitoring, including the authorized and in-plant limit values or the reference threshold limits and their applications.

(2) The in-plant radiation protection order requires approval by the State Bureau for Atomic Safety and Radiation Protection or may be prepared by this bureau and must be continuously updated. In the case of individual projects, the in-plant radiation protection order may if necessary be stated in concrete terms by the authorized employee in the form of radiation protection instructions. The radiation protection instructions must be approved by the radiological safety officer.

#### Section 40

##### Instruction

(1) Before their employment begins radiation-exposed personnel and operating personnel must as a matter of record be instructed as to the hazards involved in the use of atomic energy; their duties with regard to radiation protection and the proper protective measures and procedures to be implemented, particularly in the case of off-normal events, based on the in-plant radiation protection order. This instruction shall be enhanced by practical experience. For visitors entering radiation protection areas the procedure shall apply accordingly. The directors of the enterprises shall ensure that this instruction is provided. The labor safety and fire protection orders and other guidelines involving the given labor sector shall also be considered in providing instruction.

(2) Radiation-exposed personnel and operating personnel shall be instructed in radiation protection procedures at three-month intervals and upon resumption of their duties following a longer interruption of their work. Instruction shall also be given when new types of work introduced or changes in working methods are expected to cause changes in the radiation protection situation.

#### Section 41

##### Duties of Radiation-Exposed Personnel and Operating Personnel

Radiation-exposed personnel and operating personnel shall be conscientious in complying with legal provisions regarding radiation protection, as well as the limit values and conditions required for safe operation of nuclear installations, and shall perform their duties in such a way as not to endanger themselves or others. They are obligated to report immediately any deficiencies



in radiation protection and any off-normal events to the authorized employee or the radiological safety officer.

Re Section 16, Paragraphs 4 and 5 of the Order:

#### Section 42

##### Record Keeping

- (1) Records shall be kept of incoming radioactive substances, their use and any remaining amounts. The loss of any radioactive substances shall be treated in accordance with stipulations as an off-normal event.
- (2) Radioactive materials and radioactive wastes shall be stored in special locked storage rooms and containers constructed of materials which are not readily combustible. The following may not be stored together with radioactive materials and radioactive wastes:
  1. flammable substances
  2. explosive substances
  3. aggressive chemicals (e.g. acids)
  4. food and drink, commodity goods, animal feed, drugs and substances, preparations and articles equated with drugs, health products, pest control products.
- (3) Explosive substances may be stored in neighboring rooms only with the consent of the local fire protection agencies. The requirements regarding storage rooms and containers for radioactive materials and radioactive wastes are stipulated in a separate document.
- (4) The storage rooms and containers shall be examined regularly for damage and contamination at the time intervals to be stipulated in the in-plant radiation protection order. Records of the examinations shall be kept.
- (5) Storage rooms and containers shall be provided with radiation hazard warning signs.
- (6) The permissible radioactivity levels in the storage rooms shall be stipulated in the authorization documents and shall depend upon the construction and equipping of these rooms.

Re Section 20 of the Order:

#### Section 43

##### Requirements for Ensuring Nuclear Safety

- (1) The requirements for ensuring nuclear safety and preventing accidents in nuclear installations shall be derived from the results of analyzing the course of postulated faulted conditions (faulted condition analyses). It

shall be the responsibility of the director of the enterprise, based on scientific and technical knowledge, to conduct faulted condition analyses for determining the contributing factors, the sequence of events and the reliability of components and equipment; the experiences of other enterprises with similar systems shall be taken into account.

(2) Faulted condition analyses comprise:

1. the determination of causative factors which influence nuclear safety (triggering events)
2. the investigation of the sequence of faulted conditions taking into account the original condition of the nuclear installation, the functioning of the operating and safety equipment and the actions of the operating personnel
3. the determination of the effects of faulted conditions depending on the sequence of faulted conditions.

(3) Based on the results of the faulted condition analyses the State Bureau for Atomic Safety and Radiation Protection shall stipulate design basis faulted conditions for each nuclear installation for which proof shall be supplied that the design of the technical and safety equipment and the actions of the operating personnel will prevent impermissible radiation exposure to the operating personnel and to persons in the environment.

(4) Stipulations regarding the type and scope of faulted condition analyses to be conducted, the design basis faulted conditions and their permissible effects, as well as the requirements for ensuring nuclear safety, shall be made in legal provisions or in issuance of the permit.

#### Section 44

##### Quality Assurance in Nuclear Installations

(1) The interrelated, complex measures to be taken to ensure the required quality shall be stipulated in a quality assurance system for the planning, manufacture, erection, commissioning and operation of a nuclear installation and for the nuclear safety of essential components.

(2) A quality assurance system must comprise:

1. stipulations as to the parameters for quality and reliability in order to ensure nuclear safety
2. steps for preparing binding working documents such as standards and technical documentation for ensuring quality work, as well as stipulations regarding prompt delivery of these working documents to the plant personnel
3. testing and control specifications, i.e. methods for precise fault determination and for checking the accuracy of the test and measurement equipment used

4. Stipulations regarding high quality work performance
  5. Procedures for evaluating and eliminating known deficiencies and for determining the cause of any faults
  6. Stipulations regarding areas of responsibility in carrying out individual quality assurance measures.
- (3) The quality control results shall be evaluated regularly and any inadequacies in the quality assurance system shall be remedied immediately.
- (4) Any quality assurance requirements emanating from regulations laid down in special legal provisions shall be stipulated in issuance of the permit.

Re Section 21 of the Order:

#### Section 45

##### Requirements Regarding Nuclear Installation Sites

The site of a nuclear installation shall be selected such that

1. the frequency of natural events or external influences of civilization which might cause nuclear accidents does not exceed stipulated limits
2. environmental conditions do not affect the functioning of systems or measures for ensuring nuclear safety in an impermissible way
3. a protected area can be established if the type of nuclear installation so requires
4. measures of sufficient scope can be taken within the environment to ensure protection against the effects of nuclear accidents

More far-reaching stipulations shall be laid down in legal provisions or in issuance of the permit.

Re Section 23 of the Order:

#### Section 46

##### Requirements for Operation of Nuclear Installations

- (1) Based on faulted condition analyses, nuclear safety requirements in terms of limit values for operating parameters and requirements regarding the condition and operability of technical safety equipment shall be stipulated for each nuclear installation.
- (2) Operating regulations shall be prepared for the operating of a nuclear installation and shall contain in appropriate form the limit values and requirements for nuclear safety during operation.

(3) The operation of a nuclear installation is only permissible under safe operating conditions in terms of the limit values and nuclear safety requirements. Compliance with the limit values and nuclear safety requirements shall be monitored.

(4) In the case of deviations from the limit values and the requirements of safe nuclear operation, measures shall be implemented immediately to restore safe operating conditions.

(5) All essential equipment for safe operation of a nuclear installation shall be monitored. Quality assurance measures including functional testing and in-service inspections shall be carried out promptly and thoroughly. Deviations from normal functions during operation and deviations from the required parameters discovered during testing shall be recorded, investigated and remedied.

(6) Inspection results shall be documented and evaluated at regular intervals in order to determine any factors affecting nuclear safety and to improve measures for ensuring nuclear safety.

Re Section 26 of the Order:

#### Section 47

Informing the Physician Specializing in Health Physics, Work Release Following Off-Normal Events

(1) If, following an off-normal event, it is suspected that personnel have been exposed to radiation levels above the limits described in Section 25, Paragraph 1, the physician specializing in health physics shall be informed.

(2) Facilities, work areas, technical equipment and tools which have been declared off limits following an off-normal event shall require a release from the State Bureau for Atomic Safety and Radiation Protection before they can again be put into service. The Bureau may delegate this task to the radiological safety officer.

Re Section 27, Paragraph 1 of the Order:

#### Section 48

##### Qualification Certificates

(1) State qualification certificates are issued by the State Bureau for Atomic Safety and Radiation Protection.

(2) Qualification certificates issued may be declared invalid if the requirement regarding attendance of continuing education courses is not complied with. State qualification certificates valid for limited time periods may be issued. Their period of validity will be extended upon participation in continuing education courses.

Re Section 27, Paragraph 5 of the Order:

Section 49

In-Plant Training

In-plant training shall be in conformance with the program framework provided by the State Bureau for Atomic Safety and Radiation Protection. In special cases the in-plant training programs shall be coordinated in conjunction with the State Bureau for Atomic Safety and Radiation Protection.

Re Section 29 of the Order:

Section 50

Inclusion of the Supervisory Agency in Research and Development Projects

(1) The State Bureau for Atomic Safety and Radiation Protection shall be promptly informed of research and development projects, at the latest during the stage of preparation of the studies, prognoses or lists of duties and obligations for the research and development project.

(2) During licensing the State Bureau for Atomic Safety and Radiation Protection shall stipulate the following:

- which research and development projects shall be under the supervision of the State Bureau for Atomic Safety and Radiation Protection and for which topics and studies documents must still be submitted to the Bureau for further evaluation
- which project defense proceedings the Bureau must be invited to
- which working results must be submitted to the Bureau

The state agencies or enterprises shall be informed of the decisions made.

(3) The State Bureau for Atomic Safety Radiation Protection shall suggest modifications of research and development projects if it has been established that

- questions of atomic safety and radiation protection have not been addressed at all or not to an acceptable degree in the research and development project
- the results achieved do not correspond to atomic safety and radiation protection requirements.

Based on the suggested modifications, the directors of the enterprises shall initiate the necessary actions.

Section 51

Final Provision

This performance specification shall enter into force on 1 February 1985.

Berlin, 11 October 1984

The President of the State Bureau for Atomic Safety and Radiation Protection  
of the German Democratic Republic  
Dr Sitzlack, M.D., rer. nat. (honorary title)  
State Secretary

12552

CSO: 2300/211

HUNGARY

NEW MANAGEMENT FORMS IN FOREIGN TRADE INTRODUCED

Budapest FIGYELO in Hungarian No 4, 24 Jan 85 p 10

[Article by Ferenc Kosaras: "New Management Form in Foreign Trade"]

[Text] Just as in other areas of our national economy, in 1985 we have to begin introducing new management forms also in foreign trade. This article is designed to provide information about the main trends in this area and about the future development of relations between enterprises.

In agreement with progress in our macroeconomic development we need also in foreign trade the kinds of managerial developments which promote independent, business-like enterprise management, capable of mobilizing the internal reserves in order to improve productivity.

Enterprise Boards

Most foreign trade enterprises, which are playing a decisive role in foreign trade, have thus far been supervised by the Ministry of Foreign Trade. Henceforth, according to the preliminary plans worked out on the basis of extensive research, most of them will belong to the category of those enterprises which are managed by their respective boards. In view of the size and national economic importance of these companies and taking into account our national interests and trade policy considerations, this management form seems to be the most appropriate.

The new form of enterprise management will be introduced into approximately half of the enterprises in question through 1985. In case of the other half the new form will begin functioning in the first semester of 1986. The current model of essentially state-administered management will survive only to a limited extent, i.e. in case of a few enterprises which perform paramount duties in our national economy and are playing a decisive role in the implementation of international treaties.

In case of the enterprises established as "commercial companies" (joint stock and limited liability companies) decision has been postponed; these will continue in their current form.

The reorganization of the enterprises will be accomplished with the consent of the trade unions and after proper consultation with the enterprise collectives.

As a result of all this a new situation will arise in the relations between government guidance in foreign trade and the enterprises. Insofar as the methods of government guidance is concerned. Important changes have already occurred. During the last couple of years the entrepreneurial set-up of foreign trade has developed and has been significantly modernized. Moreover new forms of foreign trade activities have evolved.

The number of economic units which are authorized to autonomously conduct foreign trade has grown from year to year. Such enterprises may be found today in a great variety of forms, in all areas of the national economy (industrial enterprises, cooperatives, agricultural organizations, partnerships, joint enterprises, etc) and are dealing with significant percentage of the overall foreign trade.

The "traditional" foreign trade organization has been renewed in part and it continues to be modernized. In addition to the large foreign trade enterprises, which concentrate on certain products, smaller, more flexible organizations have cropped up, either as independent enterprises, or as subsidiary companies. As a result of the intensification of the relations between foreign trade and producers, joint enterprises, limited partnerships and other associations have been created. Using foreign capital investment, mixed enterprises have also been established with headquarters in Hungary.

#### Increasing Functional Guidance

The so-called "commercial house" concept is in the making and in certain enterprises it has already entered into the stage of practical realization. The activities of these units will include, in addition to the traditional business functions, also the areas of organization, promotion and financing of production (see FIGYELO No 2, 1985). They will entail a much more advanced integration of production and foreign trade than what the present structures represent, and they are expected to be helpful in solving the problems of presumed or real conflicts of interests, defective cooperation and lack of information flow. The freedom of choice among foreign trade enterprises has been significantly broadened and competition between them has become more intense.

Under these circumstances the management of foreign trade activities also had to be modernized and adjusted to the changing conditions. The sectional and functional character of state management has become stronger. The ministry in charge has treated the foreign trade agencies all in the same manner, regardless of whether they were foreign trade enterprises or industrial or other kinds of economic units. The decisionmaking faculty of the foreign trade specialized enterprises has become stronger in many areas.



As a consequence of the formation of enterprise boards in certain foreign trade enterprises, the supervising authority of the ministry over them has come to an end, or rather it became limited to the so-called control of legality. The managerial autonomy of the enterprises has greatly increased. Beyond selecting their management independently, they are also free to shape their business policy and market activities, and just as the producing enterprises they also will be able to choose freely their production profile.

The enterprise boards can make autonomous decisions concerning the structure of the enterprise, for example regarding the creation of a subsidiary company, merging with another enterprise and establishing a joint enterprise. Their authority includes the assessment of the managers' work, their qualification, rendering of accounts and exoneration.

#### Strategy for Development

More independent management requires the strengthening of the role of enterprise planning and improvements in its quality. The plans underlying enterprise strategy should be worked out in cooperation with the interested collectives and experts, and an interest system should be created which is capable of mobilizing the workers toward implementing the set goals.

The working out of the enterprise plans, their implementation and evaluation are entirely the tasks of the enterprise management. The guiding government agents can influence planning only by indirect means, i.e. through the system of economic regulators. Administrative methods may only be applied in exceptional cases on the basis of authorization by the law.

In case of enterprises which are authorized to conduct foreign trade autonomously, foreign trade activities are only a partial sector of their activities. Thus far only a few of the enterprises could be characterized as having a well-formed foreign trade conception and being fully cognizant of the market and entrepreneurial possibilities. The development of such a conception should become an integral part of planning in the enterprises.

#### Economic Organizational Work

In view of the improvement in our external trade balance, the economic regulators, which are designed to orient decisionmaking within the enterprises, should play an increasingly important role in government guidance.

In view of the fact that the role of the government guiding agencies significantly loses importance in shaping the business operations of the enterprises, in assessing the correctness of their decisions and controlling their management, the economic organizational work of these

agencies, which should serve the implementation of the goals of the macroeconomic plan, acquires fundamental importance. This includes the coordination of exports and imports, the working out of projects that are to be applied to various enterprises and market research.

At the same time the increased autonomy of the enterprises and the heterogeneous character of our foreign trade organization entails increased responsibility for both the guiding government agencies and the enterprises themselves. The protection of our interests in foreign trade will require--also in the future--that the policy of our enterprises be guided on certain markets.

Trade with the socialist countries demands the high-level balancing and harmonization of the economic activities of both guiding organism and enterprises. In these relations international agreements regulate the most important elements of contractual relations between enterprises and their system of conditions.

In the developed capitalist countries growing protectionism entails more frequent inter-state interventions, and this necessitates government measures on our side as well.

In organizing and guiding our foreign trade with developing countries, we must take into account the significant differences between them, their differing grades of economic development, their prevailing political trends and their commercial traditions and methods. In some countries the government greatly intervenes in the shaping of commercial ties. In such countries inter-state efforts are playing a great role in the establishment of market positions for our enterprises.

The creation of conditions for market research, penetration into a foreign market and preservation of our position there, the acquisition of information required for commercial activities and its conveyance to the affected enterprises have all acquired growing importance in our guiding activities.

On the other hand it is also necessary that the enterprises provide the guiding organisms the information they need, and that they observe the rules which are applicable to the coordination of our inroad into various markets and to the requirements of business activities on them. In this area and particularly in business activities on them. In this area and particularly in connection with the evolving competition between enterprises, various problems have arisen during the last couple of years. In many cases the authorities had to intervene. The current modernization of the regulations under growing economic pressure and the increasing willingness of the enterprises to cooperate with each other will hopefully remedy the situation.

If an enterprise suffers damage as a result of granting priority to the national interest, it has the lawful faculty to apply for compensation. But if an enterprise does not abide by its duties, the government

may apply sanctions against it. In connection with the simplification of the process of licensing foreign trade activities, it has become necessary to make the accounting for compliance with the enterprise's commitments stricter. When granting license for independent foreign trade activities, it has also been thus far obligatory that the licensee should try to promote exports in convertible currencies. If the licensed enterprise does not possess the proper requisites for the pursuance of foreign trade activities and if such requisites cannot be realistically provided, or if the enterprise's foreign trade activities violate the laws or government regulations, its license can be curtailed or cancelled.

12312

CSO: 2500/177

HUNGARY

CAR SHORTAGE PROBLEMS PLAGUE HUNGARIANS

LD151459 Budapest in Hungarian to Australia and New Zealand 1000 GMT 15 Jan 85

[From the program "This Is What They Say About Us" presented by Gyula Bereczki and Jozsef Szabo]

[Excerpts] There is a severe shortage of passenger cars in Hungary.

The 200,000 Hungarians who have already ordered their cars will have to wait up to 6 years for delivery.

The Soviet-made Lada is offered with a 1990 delivery date. The cheapest Lada version costs 134,000 forints--about \$3,000.

In the second-hand car market the price of not too old cars reaches that of brand-new models. It is better to buy at a high price than to wait for 6 years, the customer might say.

The sentences you have just heard came from a dispatch by AFP datelined Budapest which sketches a picture of the car supply situation in Hungary. And now let us examine the article in detail:

The car salon is the only car shop in Budapest where cars have ever been displayed. The shop now has a surprise for the customer: He can choose TV sets and table lamps, but he will not find a single car there. There is a severe shortage of passenger cars in Hungary, a country lacking a car industry of its own. The 200,000 Hungarians who have already ordered their cars will have to wait up to 6 years for delivery. The potential customer at the car showroom has to be satisfied with studying a catalogue which lists the prices and delivery dates for the few models which are available in Hungary.

The Soviet-made Lada is offered with a 1990 delivery date. The cheapest Lada version costs 134,000 forints--about \$3,000. This is a very large sum for the average Hungarian whose monthly wage is around \$100. Because of its indebtedness Hungary cannot afford to import cars from the West for hard currency. The country does purchase cars manufactured in CEMA countries but car deliveries from these countries tend to be rather irregular. In 1983 Hungary imported only 89,000 passenger cars. Only about half of the

50,000 Ladas ordered from the USSR were delivered and this of course stretches the queues even longer, writes the AFP correspondent and he goes on:

Hungarians have to make tremendous sacrifices if they want to buy a mid-range car. They have to pay half the price of the car as a deposit on the day they order it. By the time the customer gets the car--several years later--the price will have gone up by about 20 percent. In the second-hand car market the price of cars which are not too old reaches that of brand-new models. It is better to buy at a high price than to wait for 6 years, the customer might say.

It is a typical shortage situation that the correspondent of the French news agency describes. For a visitor arriving from the West it is no doubt strange to see this state of affairs which is, for us Hungarians, an accustomed if not an accepted fact.

So the present practice must remain, namely the import of cars from the socialist countries. Undoubtedly, the Soviet-made Lada is the most popular and naturally the most expensive model. After all, in comparison to other models that can be obtained in Hungary, this car has the most powerful engine. This is why customers have to wait longest for this model. But there are waiting lists for the other models as well: for Skodas, Wartburgs, Polksi Fiats, and even for Trabants. This is what our French colleague does not understand. Because if what we are importing is not enough, why do we not import more? Well, we do order more, but we do not always manage to make a deal.

This industrial sector is still developing in the socialist countries manufacturing cars and the situation is basically that the production capacity is insufficient to satisfy domestic and foreign demands at the same time. Because if a country manufactures cars then some of these must be sold at home; not all can be exported even if there is a demand abroad.

Going back to the article's introduction, the correspondent writes that the car salon is the only shop in Budapest where cars were ever displayed. This shop now sells consumer goods, television sets, and lamps, but no cars are on display. This is not because the shortage of cars in Hungary is so severe. After all, in 1984 more than 89,000 new cars were sold, but because if the customers have to wait a long time for every model, the sight of cars displayed in shop windows irritates people. Thus the cars in the showroom were sold and this way at least, a few people unexpectedly obtained their new car.

CSO: 2500/204

POLAND

## SEMINAR FOR YOUNG ECONOMISTS ON EAST-WEST RELATIONS

Warsaw ZYCIE GOSPODARCZE in Polish No 1, 6 Jan 85 p 15

[Text] The Ninth International Student Seminar on "East-West Economic Relations" was held 4-8 December 1984 at the Main School of Planning and Statistics in Warsaw. The seminar was organized by students in the school's Foreign Trade Department, the faculty organization of the Polish Students Association, and the local AIESEC (International Society of Students in Economics Schools). Students and young scientific workers, representing almost 50 academic centers in Europe and North America, took part in the seminar. Students in Polish economics schools throughout the country, representatives of economics practice, and employees of Polish foreign trade enterprises were also invited to attend.

In the opening lecture, Prof Zbigniew Kamecki discussed the slowing down of trade between the socialist and capitalist countries. The most important reasons for this, according to him, are the tightening of protectionist policy, the slower economic growth rate, the payments difficulties of the socialist countries, and the general deterioration in political relations. In the case of the last of these factors, the attitude of the current American administration played a special role. This administration has attempted, with various results, to use its economic advantage to achieve purely political goals.

In examining the possibility of improved relations in the near future, Professor Kamecki listed the positive factors which would stimulate the development of these relations. The most important of them are the complementarity of economic structures, geographic proximity, preservation, despite temporary setbacks, of agreements on industrial and economic coproduction, and an excess of supply in the capital countries. The reformation of the economic structures and systems in the socialist countries, and their gradual adaptation to changing conditions on the world markets, will also have an important effect on the establishment of mutual relations.

The elements which are not conducive to the development of East-West contacts, now and in the foreseeable future, are: the low level of demand in the industrialized countries, the socialist countries' export difficulties and the related excess demand, the indebtedness problem, and the growing competition from the developing countries. Closer cooperation with Third World countries would help to revive the economies of the socialist countries, and consequently, strengthen the East's position in relations with the West.

The problems raised became the subject of a discussion in which the foreign and Polish participants, despite certain differences in the understanding of the significance and causes of particular events, offered many suggestions for improving the present situation.

Discussions in subject groups were augmented by some interesting papers prepared by the students. Of course they did not contain any universal "prescriptions," nevertheless some of the views reflected a very new approach and permitted a somewhat different look at East-West relations.

Among the most interesting were the papers discussing new forms of economic cooperation and coproduction. The functioning of joint ventures was discussed and the legal and financial aspects of the import of foreign capital were described. Directly related to this were the speeches pertaining to Polish companies with foreign-capital shares, how they are formed, the fields in which they operate, and their geographical structure.

A large part of the discussion was devoted to the financial side of the relations between the two blocs and attention was called to the difficulties occurring in this area. Most of the comments concerned the Polish debt and attempts to surmount the existing barriers.

Problems relating to economics in the socialist countries, and particularly the changes in the functioning of foreign trade, were of great interest to those in attendance. Mention was made here of the urgent need to introduce efficiently operating market mechanisms and tying domestic prices to world prices; also, breaking the monopoly in foreign trade and thus making it possible to export to those establishments which are most resilient and can meet world demand.

The positive attitude of the seminar's participants toward the development of East-West cooperation does not, unfortunately, change the fact that the present state of relations in many respects is not the best. The reasons for this are generally known and certainly it will not be easy to eliminate them. The student meeting, therefore, served mainly to teach and train the new foreign-trade cadres. It also helped to establish contacts between the teaching institutions and the students themselves.

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CSO: 2600/511

POLAND

# PRODUCER GOODS PRICE HIKES SET FOR 1985

Warsaw ZYCIE GOSPODARCZE in Polish No 1, 6 Jan 85 p 15

[Text] On 1 January 1985 the producer prices of basic raw and other materials were increased, as were energy and transport charges. These prices had to be raised due to the following reasons:

--the need to make the price of coal realistic. Despite the increases made in recent years, the price of coal is still much lower than the cost of mining it. Mining costs are growing consistently because it is being mined from increasingly deeper beds, wages are growing, and the prices of equipment, raw materials and other materials used in coal mining are going up. The hike in the price of coal will also raise the cost of electrical energy, railroad transportation, metallurgical products, and also other energy carriers, such as gas and fuel oil. The price of these, therefore, will also have to go up;

--the reduction or elimination of differences between transaction prices of imported raw and other materials and the domestic sales prices. These differences arose as a result of the two 1984 increases in the currency exchange rate: from 95 zlotys per dollar and then to 123 zlotys per collar. In some cases, import procurement prices were changed also.

Prices of raw and other materials are going up as follows: hard and brown coal, 20 percent; coke and semicoke, 25 percent; crude oil, 20 percent; fuel oil and gas fuels, 25 percent; electric energy, 15 percent; iron ore, 20 percent; metallurgical products, 18 percent; aluminum, 15 percent; zinc, 35 percent; lead, 25 percent; tin, 20 percent; cement, 10 percent; paper pulp, 40 percent; wool, cotton and chemical fibers, 25 percent; raw hides, 50 percent; sawn timber and sawmill wood, 20 percent. Polish State Railroad freight charges will go up 35 percent and automotive charges 15 percent.

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CSO: 2600/511



POLAND

# MANDATE OF NEW NATIONAL ENERGY BOARD EXPLAINED

Warsaw ZYCIE GOSPODARCZE in Polish No 1, 6 Jan 85 p 15

[Text] Last December the first meeting of the National Energy Board, appointed by order of the premier, was held in Warsaw. This board, under the chairmanship of Prof Roman Ney, will continue (in a somewhat modified form) the work done in past years by a similar group which was chaired at one time by Prof Kazimierz Kopecki.

As stated in the order, the board functions as an advisory board to the Council of Ministers, and among its duties are to make suggestions and express opinions on overall energy management. The board is made up of management personnel as well as scientists. In handing out the appointment certificates to the newly appointed board members, Deputy Premier Zbigniew Szalajda said that the government expects them to help in solving the problems which are most crucial to the economy. They include choosing the optimal concept for the development of the fuels-energy economy and ways of reducing the energy-intensiveness of the national income. That is why the board will concern itself not only with problems relating to mining and energy but also with all other sectors of the economy, because the way to reduce energy-intensiveness is through changes in the structure of production and taking technical and economic measures in various industries. At its first meeting the board looked into the status of the production of equipment which is intended to make consumption of fuels and energy more efficient.

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CSO: 2600/511

POLAND

# RESEARCH GROUP RUNS POLL ON PRICE HIKE OPTIONS

Warsaw RZECZPOSPOLITA in Polish 21 Jan 85 p 5

[Text] Saturday's (19 January 1985) newspapers published a Price Research Institute questionnaire, which is one of the elements of the consultation on food prices, reduction of rationing, and increased-cost-of-living offsets. The questionnaire contains a brief description of the particular price options and what will follow if they are chosen, and then asks 10 questions. The questions deal with the reasons why those surveyed are in favor of a particular options, their views on subsidizing some groups of food items out of the national budget, and directions of price policy in relation to fuels and energy. Other questions pertain to price relationships between food and industrial items and how monetary offsets are granted. One question deals with the financial status of the person answering the questionnaire and his family.

The authors of the questionnaire remind us that a similar poll was conducted last year. At that time, 52,000 questionnaires were returned to the Price Office and the information contained in them served to change the proposals submitted for consultation. The questionnaire is anonymous and postage-free.

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CSO: 2600/511

POLAND

#### HUNGARIAN REACTIONS TO PRICE HIKES CITED

Warsaw ZYCIE WARSZAWY in Polish 21 Jan 85 pp 1, 6

[Article by Grzegorz Lubczyk: "Long List of Higher Prices in Hungary; Bitter Taste of Economic Pressure"]

[Text] Budapest, 20 Jan--The decision of Hungary's Council of Ministers to raise of the price of many food items, heat, and some industrial products and services last week was submitted to the workforces in large workplaces for wide-scale evaluation. The people expected that prices would go up. The increases were initially presented during the December meeting of the Hungarian People's Republic's National Assembly. It was simply a matter of knowing specifically which items would go up and by how much.

The local press agency, in referring to the workers' meetings, reports that "the information on the new prices was received with understandable bitterness." For example, in the Petroleum Extraction Enterprise in Nagykanizsa it was said: The price increases worsen conditions mainly for the people who are living on pensions, those with many children, the retired, and those with low incomes, although the latter group will be helped to some degree by measures to be taken in social policy. Both in Nagykanizsa and in other plants throughout the country it was concluded that the answer to this should be more efficient and economical management of enterprises in order to reduce the size of the increases.

Ferenc Havasi, Politburo member and Hungarian Socialist Workers Party Central Committee secretary, in talking to the workforce of the Aluminum Oxide Plant in Almasfuzitoe in Komarom Province last Saturday, said that the economic pressure which lies behind the higher prices is very distasteful. This politician, who by virtue of his duties is responsible for the country's economic policies, once more appealed for better and more productive work. The authorities are not counting on approval of the decisions on price increases, but they are counting on an understanding of the situation.

According to a government report prices in 1985 will not rise more than 7 percent. It states that the present hikes are necessary due to the need to maintain a balanced budget, and that they will make utilization of energy more efficient, and are linked to the growth in production costs and a reduction in subsidies.

These are the prices in effect on 21 January:

--Milk and milk products are going up an average of 28-29 percent. This includes a 27 percent increase in the price of cow's milk, about 40 percent for cheese, and about 17 percent for sour cream. For example, a liter of milk now costs 7.6 forints (up to now, 6 forints). One kilogram of "Trappist" cheese, 77 forints (up to now, 53 forints).

--The price of sugar will increase an average of 16 percent. For example, 1 kilogram of granulated sugar will go up from 21.50 forints to 25.

--All types of frozen foods--meat, 16-18 percent; canned fruits and frozen vegetables, 11-12 percent. For example, the price of a popular canned meat will go up from 16.1 to 17.5 forints, a package of green peas from 20 to 22.6 forints, and a 100-gram container of tomato paste will go up from 5.7 to 6.1 forints.

--Prices of baby food will remain unchanged, but the sweets which are liked by the older children will go up an average of 5.5 percent, including candy about 10 percent, and chocolate 5.6 percent. For example, a 20 decagram package of cocoa, formerly 28.6 forints, is now 33.5 forints.

--Charges in factory lunch rooms and dining halls are also being raised, except that the enterprises which are in better shape can assume the additional costs themselves. Charges in educational institutions and social establishments will remain the same, and the differences will be covered out of the national budget.

--Prices and payments for coal, briquettes, fuel wood, gas and heating services will rise an average of 25 percent. This includes a 30 percent increase in the price of fuel oil and propane-butane gas, and an 18 percent increase in electrical energy. For example, 100 kilograms of wood now costs 97.5 forints (up to now it has cost 78 forints); 100 kilograms of good-quality coke which formerly cost 196.4 forints now costs 253.3 forints; one liter of fuel oil now costs 6.2 forints, formerly 4.8; and a cubic meter of hot water, formerly 10.2 forints, is now 13.5 forints.

New payments for electricity (one kilowatt hour is going up an average of 25 fillers) and piped gas will go into effect on 21 March 1985.

--Postal services are going up an average of 75 percent, except that postage on a standardized letter will now be 4 forints instead of 2, and that a stamp for a postcard will now cost 2 forints instead of 1.

--As of 1 February city transportation will cost an average of 55.6 percent more. For example, the price of a monthly ticket on all transportation lines in Budapest has gone up from 110 to 170 forints. Tickets for students and retirees will remain as heretofore.

--As of 21 January, tickets to theaters, cinemas and concerts rose an average of 15 percent; books, except for textbooks, went up 7 percent.

--Effective 1 April, unionists will have to pay 13 forints a day more for vacations in season, and 7 forints a day more out of season, which is a 10-15 percent increase.

--Automobiles are going up an average of 3-4 percent, depending on the make.

The second part of the very extensive report concentrates on describing personal incomes, which in 1985 are supposed to increase 8 percent. Compensations were anticipated. Thus as of January, in addition to the usual annual automatic increases, annuities are to go up 8 percent. But the spouse supplement, allowance for raising a child, and student stipends are also going up. For example, the family supplement for three or more children is being increased from 70 to 120 forints per month for each child. Now the total amount of supplements for one child will be 840 forints in families with many children.

Employers have the right to unconditionally grant wage increases of 50 forints for each employee.

A favorable change is being made in the sick benefit for the chronically ill. In February, stipends in vocational schools will increase 50 percent. In March, a new system of benefits for raising a child will go into effect: It may amount from 2,250 to 4,500 forints a month. An announcement has also been made that maternity leaves will be extended four more weeks starting in September and that the one-time allowance after childbirth is being increased from 2,500 to 4,000 forints.

It appears from the press comments that principally the products and services which had been largely subsidized by the state are the ones on which prices are being changed. The national treasury will continue to be generous, but the size of the subsidies should be reduced as much as possible. That is the course of action that was chosen. Transportation is given as an example. Its revenues thus far have not even covered one-fourth of its expenditures. It is the same with milk. The increase will only reduce the high subsidies now being granted.

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CSO: 2600/511

POLAND

#### LATEST ISSUE OF ZARZADZANIE REVIEWED

Warsaw RZECZPOSPOLITA in Polish 9 Jan 85 p 4

[Article by (w): "Latest Issue of ZARZADZANIE; What Is the Origin of Shortages?"]

[Text] To most readers, ZARZADZANIE instantaneously evokes a list of the 500 largest industrial enterprises, twice published by the monthly, which is apparently realized by its editorial board, as it now keeps exploiting this topic to the full. Its current issue offers a survey of press comments (some remarks, critical of the first listing of the top 500, were taken into account when the list was published for the second time), a discussion of reactions of the directors of those largest enterprises, and aggregated results for all industries compiled under the same criteria as those used for the "List of 500."

The well-known saying that one has to know how to read not only the lines but between the lines as well can be paraphrased: one has to know how to read between numbers, too. Prof Janusz Goscinski, analyzing some well-known numbers in his article "On Material Structure," discovers truths unknown: despite the political decisions, despite centralized planning, despite the many bold reform programs, the structure of the Polish economy has remained virtually unchanged since 1975. The electrical machinery industry, whose expansion tended to overfill the TV screen, continues to be labor-intensive rather than capital-intensive. Many other myths are similarly abolished, not only those of the past: the author is critical and skeptical of the future of the reform.

The clarity and simplicity of reasoning are astounding in an article by world-renowned Hungarian economist Janos Kornai, entitled "What Is the Origin of Shortages?" As the author notes, "In a socialist economy, not a single company or agency is unwilling to invest." He goes on to reflect on whether this is a structural development that can be curbed.

Two reports from abroad share the same page. Gerald Louvet, chief of a training center near Versailles, finds that directors want to be trained because they notice that others are receiving training. "This may appear to be just a fad, but it is not so. A style of operation has simply become de rigueur..." Engineer Liu Husheng, deputy director of the Technological-Economic Institute in Beijing, reports on the rejuvenation of China's corps of directors: until now directors averaged 55 years of age, the new ones are under 30.

Does an agreement among directors in a single locality, resulting according to a reporter's interviewees in the elimination of the problem of staff-snatching, constitute a cartel-like collusion? Does it not infringe on the constitutional right to change the place of employment? Reporter Slawomir Lipinski raises this and similar doubts and shares them with the readers in his article "Managerial Charity." Evidently, the directors themselves had those doubts, since they insisted that their cabal was implementing no policy of their own making, but rather a policy of the local authorities themselves.

Disheartening conclusions follow from Prof Adam Sarapata's article "Who Respects Directors and What For." Opinion polls indicate that relatively the highest measure of respect is accorded a director by unskilled workers, the lowest by the intelligentsia. Following several tentative interpretations of this state of affairs, Professor Sarapata concludes: "The public's attitudes toward the managerial corps are, for the most part, what the corps has earned for itself."

The sociological section "Opinion" is dominated by young adults' topics; professional ambitions of young workers, their influence on decisionmaking, active leisure concerns. We will focus our attention here on "Evolution of Self-Government in Factory M in 1981-83," an item without a spectacular title but highly interesting in content. Two studies conducted at different times, like two different photographs, allow us to notice changes, during a period of some importance for society, as it contains the hiatus of martial law. The authors affirm that the need for self-government has grown, but the possibilities for partnership and codetermination have not kept pace with it. It is up to the reader to decide to what degree this assessment applies to other plants.

There are nearly 30 consultant enterprises in Poland now. The reform has created a demand for their services and rendered their formation easier. "Consultant services are very frequently used at the request of employee self-government bodies," as we learn from a newly added section entitled "Notes, Data, Signals," containing brief and interesting information on various diverse areas of economic life.

Contrary to debating principles, an exchange of opinions about inventions published in the Pro and Con series is titled "Everyone Is For." Everyone is for, but inventions are few, and even fewer are applied in production. Enterprise autonomy on the one hand and an undersupplied and unexact market on the other hand provide no optimistic preconditions for improvement.

Those readers who start their reading of Wieslaw Jakobiec's "How To Deal With Lack of Time" with high hopes will be disappointed. No miraculous prescription is offered, but instead a handful of sound suggestions on how to organize one's day, week, month. Most of us possess systems of our own; some carry loose cards listing their errands, others jot on cigarette packets. Perhaps, as the author recommends, it is worth trying to use a calendar with a proper schedule?

The 63 pages of the ZARZADZANIE monthly offer many pieces on directors, for directors, and pitying directors. Aleksander Wieczorkowski's regular column on the remaining page contains this comment: "My amazement has been growing for decades that this slave toil finds takers, not sentenced to it, but ready

and willing to accept it with no coercion. There is something metaphysical in this unceasing belief of thousands of mentally sane persons in it being possible to direct an enterprise better than their predecessors have done."

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CSO: 2600/471



POLAND

DETAILS ON HARD CURRENCY AUTO EXPORTS TO PRC

Warsaw ZYCIE WARSZAWY in Polish 7 Jan 85 p 1

[Article: "Polonez Autos, Compacts, Jelcz and Star Trucks to China--Pol-Mot's Largest Export Contract"]

[Excerpt] There are many skeptic souls who frown at the products of the Polish automotive industry. To be sure, it is not manufacturing the world's most modern automobiles now, but, following many tests and trials, the major Chinese consumer market has approved both our passenger cars and trucks from the Jelcz Automobile Plant, the Truck Plant in Starachowice, and the Special Vehicle Factory in Kielce. Faced with some tough competition from many companies, including some Japanese and West European firms, Pol-Mot was able to conclude its largest export contract ever, for nearly 221 million Swiss francs, the currency the PRC uses in dealings with its foreign trade partners.

Under the contract, the FSO [Passenger Car Factory at Zeran] will deliver 14,150 passenger automobiles in 1985, and the China National Machinery Import and Export Corporation will also receive 1,100 Jelcz trucks of various types and models, along with 5,000 smaller Star trucks (the contract was finalized and signed in Warsaw on 6 January).

Their durability has assured some name recognition in the Chinese market for the Warszawa cars, Polish Fiats, and Jelcz and Star trucks, exported to that market in the past. Their good reputation undoubtedly helped in the resumption of trade contacts and the signing of the contract in question. Now, however, it will be up to our exporting companies to survive in this difficult market. Among other things, they will have to assure warranty servicing for the exported vehicles, and provide proper training and familiarization with Polish-made automobiles to Chinese specialists.

According to FSO Director General Edward Pietrzak, although the Polonez and FSO 1500 automobiles from the Zeran plant will be specially prepared and secured for the 3-week maritime shipment from Poland to Chinese ports, it will be necessary to check if they are fully operational on location as well before they are received by Chinese users in nearly 100 different locations in China. This year, export shipments will primarily include Polonez 1500's with 75 HP engines, in four colors, equipped with importer-specification items like side-swipe protection guards, tachometers, and rear window wipers. To assure efficient servicing during the annual warranty period, the FSO will send approximately 15 employees to China.

POLAND

TRANSPORT SYSTEM EXPANSION IN 1984 RECAPPED

Warsaw ZYCIE WARSZAWY in Polish 9 Jan 85 p 1

[Article by Ch.: "8,300 Kilometers of Electrified Routes; Modernization of Shunting Yards, 1,000 Kilometers of New Local Roads; Transportation Investments up to Potential"]

[Text] Electrification is currently the most essential element in the modernization of the railroad system. Last year, more than 470 km of rail routes (slightly more than planned) were made operational, which resulted in the combined length of electrified routes in Poland reaching a total of 8,300 km. This represents one-third of the total length of regular rail routes.

In the east-west direction, electrification was completed on the Lublin-Chelm-Dorohusk route, on the major transit route of Terespol-Rzepin, and on the Wroclaw Lesnica-Legnica-Milkowice segment in the western section. In the north-south direction, the Torun-Bydgoszcz, Kutno-Plock, Nasielsk-Ciechanow, Czerwiensk-Rzepina sections and the first segment of the Tarnow-Muszyna-Krynica route were electrified.

The modernization of shunting stations, carried on an unprecedented level, is of major importance for the rail system. Last year, the stations of Wroclaw Brochow and Tarnow Filia were restructured and modernized, including rail brake assemblies. At the Lublin-Tatary station, serving as an experimental installation in this area, another stage in the restructuring and automation was completed. The restructuring of the Tarnowskie Gory station was continued, while work was begun on the shunting stations of Warszawa Praga and Wegliniec.

Investment in the highway sector is relatively modest. More than 40 km of new state road sections were opened to traffic and more than 2,700 km of roads were overhauled last year. Surface improvements were made on more than 2,400 km of routes. Repairs and upgrading have resulted in improved technical characteristics of nearly 3 km of bridgework. With vigorous public participation, nearly 1,000 km of hard-surface new roads were built, and approximately 2,300 km of roads were upgraded.

Of major importance for air transportation was the thorough overhaul of take-off runways at the Gdansk Rebiechowo airport. The platform slab in front of the terminal was widened and takeoff runways were reinforced in Katowice. In

Poznan, more advanced radar devices were substituted for the old ones, and in Warsaw, container-transported components were assembled into a pavilion for air traffic controllers' training center.

Clearly, in a period hardly favorable to investment, a number of essential transportation projects were successfully completed, although certain urgent issues, for instance, the assuring of normal conditions for the servicing of air traffic in Warsaw, are still awaiting better times.

8795

CSO: 2600/471

POLAND

FSO PLANT SEEKS CAPITAL FOR OVERHAUL, RETOOLING

Warsaw ZYCIE WARSZAWY in Polish 14 Jan 85 p 4

[Article by (dar): "To Launch Production of New Automobile; FSO Seeks 35 Billion Zlotys"]

[Text] The past year was quite good for the Zeran FSO [Passenger Car Factory]. It succeeded again in expanding production and delivered 90,500 cars to its customers, which, along with other items, amounted to more than 80 billion zlotys. Despite the increasingly difficult conditions, more than 26,800 Polonez and FSO 1500 automobiles were exported.

This year's tasks are even more ambitious: the FSO work force intends to make at least 95,000 cars, including 42,500 to be exported. Whether such expansion in production and exports is possible was the topic of a meeting between reporters and FSO's political and production activists last Friday.

At this time, the FSO work force is in a tough situation because of the lack of sheet metal, screws, rubber products, alternators, and many other components. Many-sided efforts are being made to improve this situation, including the establishment of close cooperation with the Lenin Steelworks, the maker of auto body sheet metal.

Regardless of how much effort is needed, routine problems can be handled, as shown by past experience. At the Zeran plant, however, they are well aware of the fact that FSO should terminate the 18-year long manufacture of the FSO 1500, and the Polonez automobiles must be modernized and improved to reduce weight and improve fuel economy. Another set of modifications will be made in the current year, including expanded use of the 5-stage gear boxes, electronic ignition, and fuel supply cutoff in neutral. These modifications will make the Polonez more attractive. They will also be incorporated in the manufacture of the FSO 1500, which is to be continued.

The future of FSO, however, is in midsize automobiles with modern economical engines of 1200 cm<sup>3</sup> capacity. Cars of this kind, 5-seaters, should be manufactured on the basis of state-of-the-art technology, less materials-absorptive than those currently used by FSO. Its management estimates that 25 billion to 35 billion zlotys will be needed to retool the plant and prepare for the manufacture of the new automobile. Currently, ideas for raising these resources are being developed, including the ZYCIE WARSZAWY suggestion to issue bonds to be bought by potential purchasers of new automobiles from the Zeran plant.

POLAND

BRIEFS

'NOT,' GOVERNMENT COOPERATION--Projects for the immediate future of the Office for Scientific-Technological Progress and Applications, newly created by the Sejm, along with the possibilities of cooperation between this state agency and the NOT Federation of Scientific Technological Associations, were the topic of the 7 January meeting of the agency's chief Konrad Tott with NOT Main Board Presidium members. The upcoming task for the agency will be to develop the scope and directions for technological research, development and application activities for 1986-90. [Text] [Warsaw TRYBUNA LUDU in Polish 8 Jan 85 p 2] 8795

ORE PILES UP IN PORTS--Szczecin Coast seaports have been clogged for several days now with imported ore consigned for the Polish metallurgical industry. Ten Polish Steamship Company ships are waiting in the port to be unloaded. The assistant dispatcher of the Szczecin-Swinoujscie Port board, Bogdan Walczak, reports that almost 200,000 tons of ore in the ships' holds are waiting to be unloaded. This is caused mainly by the situation in the Polish steel mills. Because of the extreme cold they are not accepting trains loaded with ore. [Text] [Warsaw ZYCIE WARSZAWY in Polish 21 Jan 85 p 1] 9295

CSO: 2600/511

YUGOSLAVIA

GLIGOROV DISCUSSES CHANGES NEEDED IN ECONOMY

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 12-14 Jan 85 pp 1, 4

[Interview with Kiro Gligorov, member of the LCY Central Committee, by Zdravka Cicmirko-Pokrajcic: "The Usurped Surplus Value of Labor"; date and place not specified]

[Text] It is a harmful illusion, especially if it were to spread further, to argue that we will overnight achieve greater economic stability and social security by mere changes in the economic system and the set of instruments of current economic policy, regardless of what solutions are adopted. This is to make a fetish of what can be accomplished by the changes and additions which are indeed necessary, that is, the additions to the existing economic system and its mechanisms. Even supposing that we will adapt the system rapidly and successfully to the requirements of stabilization, an immense effort will be required on the part of the subjective forces, headed by the League of Communists, if on that basis we are to achieve greater results in practice and results that are along the line of the Long-Range Economic Stabilization Program.

A part of the resistance to this program is being mystified with fears that the undivided market, that is, overcoming the "national economies," could threaten the federal system, that is, that foundation of Yugoslavia which is called ethnic equality. That fear is resorted to even when there is no real basis for it, so that these things have to be spelled out in political terms, although this has been done in the stabilization program and in all political documents.

In the series of interviews on this topic which have been published in PRIVREDNI PREGLED readers have become familiar with the opinions and attitudes of our interviewees to date. This time we are rounding out the dialogue on the Long-Range Economic Stabilization Program with an interview with Kiro Gligorov, member of the LCY Central Committee. The interview was conducted by our newspaperwoman Zdravka Cicmirko-Pokrajcic.

"It is well known that the Long-Range Economic Stabilization Program is a full-fledged response which, if applied in practice, would accomplish certain essential changes in three domains: in the present socioeconomic relations, in the economic system, and in economic and development policy. I must say

in this connection that the program even in its basic premises postulated quite clearly that Yugoslavia has an established long-range social strategy for development. This, of course, refers to our constitution and all those fundamental commitments of our society, whether they are contained in the Program of the League of Communists of Yugoslavia or in similar basic documents on which our community is based.

"So, it is a question of an overall program, but success in its realization depends on whether we approach it in a manner that is synchronized, whether the economic moves are made in an integrated, reciprocal and connected way," our interviewee said at the beginning of the conversation.

[Question] Comrade Gligorov, is partial implementation of the Program a good way of carrying it out completely?

[Answer] You know, the economy is a large system in and of itself, and all the parts have to function in a synchronized way and in unison. Any change in one part of the economic system, even in a subsystem, has its consequences in all parts, which is why a partial approach to realization of the Program is not a good way of achieving what is desired in the Program. Certain inevitable steps have been taken so far. These are the realistic **rates** of exchange of the dinar and the real interest rate. However, insofar as those measures are isolated and not accompanied by everything else that is necessary, and must coincide with the rate of exchange and the real rate of interest, then certain halfway results can be achieved, but that is not an integral approach to correcting the existing causes of the economic crisis.

[Question] Should financial consolidation of the economy have been carried out at the very outset?

[Answer] There is no doubt that financial consolidation of the economy is one of those important and, one might say, even decisive measures which should be taken, but I would not single out a single one to stand by itself. I think that the Anti-Inflation Program furnished a complete inventory of the measures which ought to be taken in good time and should follow one upon the other. The same applies to the foreign exchange system and money-and-credit system, the banks and tax policy.

#### Steps Compelled by Necessity

Since the Program has not been carried out in all its components, that is, since the course of stabilization is at the present relying only on the realistic rate of exchange of the dinar and the real rate of interest which have been established, we have some people who think that a conception has been adopted which expects to solve the problem of stabilization of the Yugoslav economy with well-known monetaristic measures. Nothing could be more mistaken. The long-range program does not take as its point of departure either the monetaristic theory or the Keynesian school or any other school, but an analysis of the basic causes of our economic crisis, a respect for economic laws in the context of social ownership and self-management, and what our own science and practice have learned. It clearly and precisely defines the

position of associated labor and the sociopolitical communities, distances itself from statism and all those forms of regulating economic flows which are not suitable to the self-managing nature of our economy.

[Question] Why have the measures envisaged by the Program not been respected?

[Answer] It is obvious that there could have been no dilemmas over the taking of certain steps compelled by necessity. For instance, if a country is overindebted and if that is the basic problem of the country's external liquidity and indeed economic independence, then the first thing, this no one can dispute, is to stimulate exports and obtain from exports at least the income one can get from domestic sales. The relations between domestic and foreign prices have obviously been upset, since for years the dinar was overvalued, and this step had to be taken, there was no dispute about that.

Interest rates were so low, and inflation was steadily rising, so that interest rates had to approximate the rate of inflation and become real. Especially when it is obvious that depreciation has been unrealistic, and income has in large part been fictitious and savings discouraged. However, as soon as it was necessary to move on to the other sectors of the economic system in which the changes do not appear at first so urgent, and interests differ, then the debates and disputes began over the other changes which the Stabilization Program envisaged. It is natural that polarization should have come about in such a situation. Certain changes in one domain suit certain entities in the economy or other sociopolitical communities, while certain others in turn suit certain others, and so on. Thus the debates and the polemics and the division began all over again about issues on which basic agreement had been reached back during the 2 years of work on adoption of the Long-Range Program, and that has led to procrastination in carrying it out. Of course, when that happens, then ideological differences in the treatment of particular problems also begin to crop up.

However, if inflation grows as it has been, if the dinar continues to lose its value, if interest rates rise, then there is every indication that only the full realization of what the Program envisages can be expected to overcome the crisis, not halfway measures.

[Question] There is vacillation over whether the Program has envisaged certain political changes together with the economic changes, as was the case, for example, with the 1965 reform.

[Answer] Certain changes in the political system must in fact accompany any profound changes in the economic sphere. That is, strengthening the position of associated labor, essentially narrowing the material foundation of statism, and so on, have to bring about different relations in the political sphere. After all, we would be far from materialistic doctrine and from Marxism if we thought that changes in the economic sphere did not bring about certain consequences in the political sphere as well. Or that the economic crisis, and we stated explicitly in the Long-Range Program that we are dealing with a crisis, does not generate any sort of consequences in the social and political sphere.



## Formation of Value

So, certain changes in the present political system are certainly necessary. But we have been concerned above all with what should be changed in the domain of self-management, in the present position of associated labor, and here we have taken note of a number of facts which necessitate such changes. For instance, we raised the issue of the treatment of social resources, the issue of the position of the producer, who cannot be only a producer, but must also be a manager, and accordingly a responsible holder of social property and an entity responsible for the benefits achieved with that property. We also raised the question of income, with its various economic functions. We drew the conclusion from this that the gross personal income of the workers, based on the principle of equal remuneration for equal work and accumulation as a function of the social resources employed, constitute objective criteria in the distribution of income. Then the Program treated the relation between the basic organization of associated labor and the work organization in the light in which the constitution envisaged that. Finally, the question of prices was raised and of the entire sphere of the formation of value in our country. This means that prices must be formed objectively on the basis of the prices of the factors of production on the market, but the plan cannot be a plan of wishes, that there cannot be a single voluntaristic act independently of society's material limits. It was also stated that the dinar must be the sole means of payment in the country. We thereby defined the relation of the dinar toward foreign currencies and of the domestic economy toward the external economy.

[Question] So, you have presented much of what was sketched out in the Program and has not been implemented, such as, for example, the proposition that the dinar is the sole means of payment in the country.

[Answer] Although no one cast doubt on that fundamental commitment, in practical policy acts are still tolerated which contradict that commitment: for example, the sale of goods for foreign exchange or credit financing on the basis of a purchase of foreign exchange, and the like, which only illustrate the inconsistency we have referred to in the practical implementation of the Long-Range Program. An effort is still being made to make use of whatever possible in legislation and practice which is obviously superseded and harmful and is only prolonging the time it takes to get out of the crisis and is raising the price which we are paying. That is only a part of a broader lack of understanding that is manifested in the differing conception of the foreign exchange system and the resistance to the effort to change the present situation in that sphere, which has done a great deal to splinter associated labor and the undivided market, as rapidly as possible.

We cannot divide the economy into that portion which is exporting and that portion which is not. Each of the entities in that economy must be guided by the principles of productivity and optimality. But the position of the domestic currency is essential to an optimally organized economy which tends toward association as an economic necessity. If we hesitate here and take the view that there can be more than one standard of value in our country, then we are destroying what stands as a general recognition of economic

science: that foreign currencies are only an instrument of payment in international payments and cannot operate parallel to the domestic currency and perform its function in an optimally regulated national economy. If we vacillate here, then nothing will come of the Stabilization Program.

[Question] Will the Program perhaps melt away like the 1964-1965 reform, since it melted away in its third year, when the polemics started up over it?

[Answer] Major social changes without a definite social consensus backed up by the enormous majority of people, and above all the leading forces in society, the League of Communists, the Socialist Alliance, and so on, are not only risky, but usually they are doomed to failure as well. So this accounts for the very great responsibility of all the responsible factors in this country, in the Federation, in the republics and opstinas, to mobilize to the maximum all forces on behalf of the speediest way out of the crisis by accepting the Program. If in the course of its realization there is vacillation, doubt, reassessment of views which have already been agreed on, this expresses above all the weakness of the subjective forces and of the responsible agencies of government.

#### Abandoning the Concept

The lessons of 1965, which have been mentioned, are obvious. In the realization of the program at that time there was a fairly high degree of unity at the outset, and there was also the prestige of President Tito, who backed the reform, and it was, of course, backed not by him alone, but also by the other leaders. When after the stagnation output, productivity and exports began to rise, but there were also increased difficulties because of augmented social inequities, higher unemployment, the departure of workers abroad, the student unrest, and so on, regardless of what was the immediate pretext, it is obvious that at the decisive moments persistence failed, and the subjective forces hesitated and changed the course of action.

Now under altered conditions we are going back to certain steps which we took at that time. We have behind us a decade of development which has been burdened with mistakes in development policy and in the economic system. A period of time, then, which we have lost. The question is whether we are now putting it at risk once again. In my opinion this is above all a problem of the subjective forces and of their ability to achieve a minimum of the necessary unity for us to carry out what we have agreed on.

[Question] If we had carried out the 1965 reform to the end, what in your opinion would be our economic situation today?

[Answer] Much better, I am convinced. Had the reform been carried out, we would have had a good economic foundation for the changes made by adoption of the constitutional amendments and the 1974 Constitution and would have avoided certain errors in creation of the economic system. The respect for economic laws incorporated into the 1965 reform program would have preserved us from those errors. Nor would the mistakes have been able to occur in economic policy for statism to take on the proportions that it has. The position

of associated labor based on respect for economic laws would have been a barrier to the growth of statism, and it would have prevented the government from interfering in a sphere which is not appropriate to it and above all from usurping the surplus value of labor.

Consequently, the present reaffirmation of economic laws, the respect for commodity production, real income, real accumulation, the real rate of interest and real rate of exchange of the dinar are things we not only cannot give up, but we must use all of these things in the interest of the development of socialist self-management. That is unfortunately something that was stated way back in 1958 in the Program of the League of Communists of Yugoslavia, and this is something we have sinned against several times over the last two decades.

[Question] Comrade Gligorov, let us say something more about the Anti-Inflation Program and about inflation. Is that program being carried out?

[Answer] It is the most urgent in view of our level of inflation, and it is really a pity that it is not being carried out as an integral program, but, rather, certain of its proposals are being undertaken.

[Question] Please tell us what those proposals are?

[Answer] For instance, the real rate of exchange of the dinar and real interest rates are in effect, but the other measures are not being carried out. For example, an important proposal of the Federal Executive Council taken over from the Anti-Inflation Program concerning cessation of the use of reserve funds to cover losses in the economy, was not adopted in the SFRY Assembly, but rather a compromise version was adopted which allows that possibility to exist for another 2 years though to a smaller extent to be sure. If the proposal of the Federal Executive Council had been adopted, that would have been a radical step that would have placed everyone in a position of having to change everything in his own house that led to the creation of losses. Every economic entity which has losses or is on the boundary between profit and loss would have to reassess itself, and that would force them to be more decisive and effective in changing certain parts of the economic system and economic policy. The solution that was found of using the fund to cover losses in a 2-year transitional period postpones the undertaking of other measures of the Anti-Inflation Program as well; that is, it leaves room for postponing the fight against inflation for another 2 years. It is well known in the economic history and practice of the advanced countries that inflation is overcome in 2, 3 or 4 years or it becomes a phenomenon which people become accustomed to as "normal" conditions of work and life, with consequences that are, of course, serious for the economy and for self-management itself.

Debtors and Creditors--Equal

Accordingly, the rule applies to the Anti-Inflation Program that we either fight inflation along the entire front and take synchronized steps which are interconnected, or we decide to tolerate it over the longer term and wait for favorable conditions to come about in the world, and within the country

gradually put the situation to rights and thus calm inflation without any very profound changes in the economy. If in our rather disrupted economic and financial relations, one could hardly expect that, and the results that might be achieved would be on shaky legs.

[Question] The monetary-and-credit system naturally encompasses the banks as well, in whose hands the economy now rests, but it ought to be the other way about, the economy creating the banks with its resources.

[Answer] Well, our banks--perhaps this sounds a bit strong--are not true banks. After all, as we know, the sociopolitical entities are regional as well, such that the banks take on regional features which have predominate influence on their decisionmaking. And then the principle was adopted that debtors, together with creditors, have an equal position in the banks. These two things completely frustrate the banks from being what they must be, from being at the service of associated labor which is creating income and which is moving the material boundaries of our society forward.

Second, the banks must become factors which operate with equal rights throughout the entire Yugoslav market so as to open up channels for flows of money and social resources. Otherwise there is no successful banking system.

[Question] Is it true, as certain economists who worked on the Commission for the Stabilization Program assert, that the politicians have often not accepted their opinion?

[Answer] There were serious differences of opinion over the foreign exchange system. But not over whether the basic concept should take as its point of departure the desire for us to aim at the convertible dinar, but rather over how we are to get there and how much time we need. In the end we agreed that a transitional period was indispensable, the modalities of the transitional period were sketched out, but this has not been implemented. Goods are still sold in our country to domestic persons for foreign currencies, which means that the dinar is not the sole means of payment in the country, and yet the first phase of the program foresaw that as a minimum. Moreover, if credits are furnished on the basis of the sale of foreign exchange, and credits are obviously one of the sources of inflationary activity in the country, then this is not right. Of course, these are only two examples, there is a bit more to the nonimplementation than that.

#### The Problem of Responsibility

So, there is no need to reflect about any gap between the representatives of economic science, especially that part of it which worked on the drafting of the Long-Range Program and policy, but it is obvious that in the political sphere there is not yet enough agreement or persistence to implement that program the way it was conceived.

[Question] Certain participants in creating the program, who are now in a position where they can influence its implementation as it has been adopted, are not doing so. What do you see as the reasons for that?

[Answer] Disunity and the differing ideological approaches which have not yet been superseded. No one can win the ideological battle on that plane except the League of Communists. In my opinion it is one-sided to insist solely on the Federal Executive Council, or even on the Assembly, although with a more decisive stand they could contribute a great deal to getting the subjective factor into the battle. But still that battle has to be won by the League of Communists and the front of the subjective forces. This cannot be required of the executive power.

[Question] But the people in the League of Communists and indeed even in the Central Committee are precisely those who gave their consent to that program.

[Answer] That is indeed the problem of responsibility and the capability to carry out what we have decided on. In the end the main theme of democratic centralism in the League of Communists of Yugoslavia is that once a concept is adopted on the basis of democratic debate and decisionmaking, it is carried out in a united body. Even though I might, of course, think differently about certain stands, I keep that to myself, I could be proved right tomorrow, perhaps some of the proposals or views adopted in the program will later be corrected on the basis of experience and practice, but worst of all those solutions is indecisiveness in implementation, hesitation when we need to move into action.

[Question] Comrade Gligorov, are we a strong enough society to simply remove those who are hesitating from that position and move on?

[Answer] That would normally have to be expected in a democratically organized self-managed society. Postponements and hesitation have their price. It is not a matter of indifference whether we will suppress inflation in 2 years or whether it will take three, whether next year it will be reduced to two-thirds of what it is now or half of what it is now. These are very essential matters and they can lead this country more rapidly or more slowly out of the crisis, but each of these versions has its price. The price of procrastination in carrying out the program lies above all in the decline of real personal incomes and the standard of living. Consequently, at the most sensitive place and with the greatest consequences. The choice that was offered in the form of the Long-Range Program was very clear; that is why it was said that the program had been adopted as by plebiscite. I cannot fail to point to the irresponsibility of individuals when in their public statements they often call the foundations of the program into question and minimize its importance. I do not know whether they are aware of that responsibility which they have.

[Question] Please tell us to what extent the requirements of the International Monetary Fund in the negotiations last year, and indeed even earlier, influenced certain measures in the Long-Range Program?

[Answer] The monetary fund is doing its job on behalf of the interests which it represents, and it is well known what interests those are. At the same time, to what extent the fund will use its ability to impose certain conditions on an independent country depends on how ready that country is to

undertake everything that is necessary to get into a position to talk differently with the fund on the basis of its own views of the problem.

#### Making a Lot of Noise Accomplishes Nothing

If we had carried out the program more resolutely, since we had adopted it before we had begun to negotiate with the fund, our position on the basis of the results being achieved and which would have been considerably better if the program had been consistently implemented, would have been different in the negotiations with that international financial institution. So criticizing the fund is certainly not going to get us anywhere if we think we are going to change it, that can only result from an international action. You know, when inflation reaches 60 percent, then it is certain that the conditions which the fund sets will be different than if in the meantime we had applied all the measures of the Anti-Inflation Program, which would have cut it at least in half. Consequently, that problem has two sides. We have to approach it objectively. It is one thing to behave toward the fund as suits an economically and politically independent country, and at the same time to be consistent toward yourself and toward your own decisions and the program which you have adopted, and do the maximum possible to get into an economic situation where no fund will be in a position where it can set the conditions.

7045

CSO: 2800/167

YUGOSLAVIA

PERISIN DISCUSSES STABILIZATION, FINANCIAL CONSOLIDATION

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 22-24 Dec 84 pp 1, 4

[Interview with Dr. Ivo Parisin, professor at Zagreb University and chairman of the Federal Social Council on Economic Development and Economic Policy, by Zdravka Cicmirko-Pokrajcic: "Who is Tripping Up Financial Consolidation?"]

[Text] The Long-Term Economic Stabilization Program has been adopted. The first practical steps have been taken, and discussions are being conducted about this in society. What has been agreed upon, and what will be agreed upon in the coming months and years, provide a basis for the views that Yugoslavia has already entered a new stage in its development. There are still no platforms or concepts in a developed form, however. The economy is, admittedly, increasingly more willing and determined to win a place in the world market, and thus increase production, employment, personal incomes, etc. Unfortunately, success does not depend on the economy alone, and so we are back in the area of the unbreakable link between economics and politics. The stabilization program, about which idyllic tirades were uttered at the time of its adoption, has become our reality, but for many people, as Ivo Perisin says, it is too crude for them to respect what they acknowledged in the past through support in the plebiscites. In this series of talks for PRIVREDNI PREGLED, our questions to Perisin, whose words may be accepted or disputed, but not ignored, deal with the causes of the standstill in carrying out the Long-Term Economic Stabilization Program, at a turning-point in development, and particularly with what should be changed now, in this significant stage. The interview was conducted by our journalist, Zdravka Cicmirko-Pokrajcic.

[Question] What in your opinion, should be done in order for the implementation of the Long-Term Economic Stabilization Program to be successful?

[Answer] My deep conviction is that the people, and thus the leadership, want the program to become a reality, because we have been "driven into a corner." If it is true that everyone wants this, then why is it not being carried out? It is my conviction that it is not being carried out because it is not emphasized enough, or because the basic "golden thread" that pervades it is being deliberately played down. The battles are being fought on the periphery, and not on the main front.



We ought to undertake all the necessary actions basically provided for by the stabilization program; steps that would equip this motor and force, which is the only one able to support the process of getting us out of our difficulties. This basic power -- the golden thread -- is man, that is, people organized in the cells of our economic being.

### Everyone for Himself

I could categorically assert that no appeals or administrative measures will be capable of getting the masses started and equipping the economic cells for real stabilizing activity until a program for the financial consolidation of the Yugoslav economy is carried out, no matter how difficult this is. It is claimed, however, that we do not have any possibilities for taking such a step. In my opinion, this is a mere illusion that is dangerous to the stabilization of the Yugoslav economy. Financial consolidation is not just a goal; it is a priority in carrying out the economic stabilization program, and it cannot be achieved by merely forcing new standards of conduct on the economy. The standards forced upon the exhausted economic cells would only act as an additional burden, making their financial situation worse, and weakening them. That is the tragedy of our Long-Term Economic Stabilization Program, and that is why it has been blocked.

In Yugoslavia, economic entities were long ago constituted supposedly as self-managing organizations, which have in fact been dependent, from the very beginning, on decisions made outside their control and on funds that have constantly been taken away from them. When the car got stuck in the mud because of internal and external indebtedness, these economic entities became powerless and incapable. Then appeared the mechanically thrown out slogan, "Everyone for himself." Thus even the existing threads that linked production cells together were broken, and so the whole production-trade process was slowed down greatly, and became more and more expensive per unit of product. Consequently, instead of trends toward improvement, we had trends toward deterioration. In spite of everything done while implementing the first phase of the Long-Term Economic Stabilization Program, no fundamental results have been achieved.

I am aware that this is a serious assertion. Nevertheless, if we start with the fact that we have cut investments back below the minimum necessary to maintain the process of production and modernization, reduced real personal incomes by about 40 percent, failed to increase exports, which are a matter of life and death for us, and exhausted the economic strength of self-managing producers even further, then there can be no doubt regarding the serious assertion I have made.

The debts burdening the economy today are so great, as is its dependence on credits, that nothing will be achieved by just clubbing it with interest rates. In order for any real economic relationship to have a positive effect, this famous financial consolidation would first have to take place; but these are only words until the means, ways, and methods are found to liquidate the accumulated indebtedness and the relationship of economic



entities' dependence on credits. In order to accomplish this, first of all the economy's debts to the banks should be settled with their claims and various social funds, which exist in our system under various names. Settlement would lead to a net position and the need for credits and the interest burden would be greatly reduced. The real debtors would appear then, and we would know which points society has to work on. This would also compel us to stop fooling around like this with a tax reform, which would not accomplish anything.

If we examined relationships in the economy, then we would see that every citizen, in accordance with his economic power, must unavoidably put his shoulders behind the stabilization process. It would then be shown that we have an enormous budget deficit that we have covered by mercilessly heaping obligations on the production cells of the socialized sector of the economy. Then we would know that we have to cover it, but not in such a way that we destroy the economy.

#### The Sounds of the IMF

Thus, in contrast to almost all the developed countries of the world, we are swaggering because we do not have a budget deficit. We do, because we have transferred it to the spot where it is most dangerous.

And in connection with this, here is a stubborn heretical thought of mine. If we have already been tricked into imitating Reagan and Thatcher, Friedman and monetarism, why have we picked precisely what they preach and do not practice? We have accepted a universal prescription for some sort of "in vivo" experiment, which has been stamped "made in the IMF," but even in the view of one of the most prominent advocates of Reaganomics, Laffer, this prescription has always been shown to be wrong.

[Question] You mentioned the International Monetary Fund. Please tell us how much of an influence it has had on the Long-Term Economic Stabilization Program.

[Answer] The mutual influence of the work of the commission for drafting the Program and the sounds of the IMF cannot be denied. The Program was prepared without this pressure, however. It is an orientation, but the economic policy being conducted is something else. It is a concrete pragmatic orientation that was not able to be governed by the Long-Term Economic Stabilization Program. Pragmatically, and probably also in the direct duel with the Fund, it was considerably influenced by some of the Fund's attempts, and then people appeared who started to claim, "The Fund did not impose this on us; it is what we had to do ourselves even without the Fund." Such talk has to be broken down concretely. The Monetary Fund demanded all sorts of things, for example, a freeze on personal incomes, that could only have been conceived of in a duck's brain. We shouldn't have agreed to anything.

I did not want to talk about the political system, since there is a great deal that I do not understand about it. Everyone in our country, however,

understands interest rates, currency exchange rates, and the system for settling accounts, even though this is a specialized field. It should have been left to the experts to discuss this. The question of the relationship between the Fund and us is a complex one, which requires political knowledge and a backbone, in addition to economic knowledge.

[Question] It is being said more and more often that the stabilization program does not suit those who are afraid of losing their status, privileges, and so forth.

[Answer] No one has pointed a finger yet at anyone for being in a privileged situation, and fighting to maintain it. We are wrangling and exaggerating to each other as if we were out of our minds. Let us be concrete and say whether it is the Slovenes, the Marcedonians, or someone else in the country, if we are going by the principle of republic or provincial affiliation. Or whether it is the exporters and importers, the producers of primary products, or the manufacturers. I say that they are all in the same boat and in similar difficulties. One cannot simply blame an exporter, or even an importer under the conditions of poor supply and the autarchic fragmentation of our market. Neither of them is an isolated island in the production system. Consequently, there are no black sheep that are located in some group, or in some area, where, guided by selfish interests, they are preventing the implementation of the Long-Term Economic Stabilization Program. My sincere apologies to the comrades who are repeating this.

#### The Transformation of Positions into a Canon

For me, this issue is associated with the social organization of our production, and with economies of scale and size, along with division and disintegration. By this I mean the small and large ones who have to work together so that together they will be large and in order to achieve an economy of scale in production, exports, and imports.

Let me mention one thing in passing: we have made a mystery out of so-called small business. I wonder whether any of its champions have studied the small business of Japan or some other country. We would then reach the conclusion that small business is firmly linked to big business, and that it does not just consist of mending pants, repairing water tanks, and so forth. For the time being, in our country it has been reduced to opening cafes and shops. In production, however, small business is, like air, organically necessary to big business. In this unpleasant commercial world, it is the buffer, the sacrificial lamb that big business dances on and that it always cuts off very easily when it does not need it.

[Question] The Program is also spoken of as a restoration of capitalism. What do you think about that?

[Answer] Someday the time will come when neither words nor means are chosen. The attributes of a turn toward an economy other than a self-managing one could not be tacked onto the Long-Term Economic Stabilization Program.

The dilemmas appear with the interpretations and with settling the order; some people are cautious about some steps, and some wonder about what social consequences will result from various steps. Now why is it that those who proclaim themselves to be opponents of dogma transform all their positions into a canon?

Even though in some cases there may be a certain entrenchment of ideas, we basically do not have any positions that would indict the stabilization program in such a manner. If we are already pleading for democratic debates, why is it that we have not taken the trouble to penetrate the essence of the intentions of those who criticize some steps very sharply and ask whether these steps are based on the Program?

One professor in Zagreb was very harsh in some of his statements. When I analyzed the essence of his positions, however, I concluded that his intention was honest and that he was pointing out that bureaucratism and technocratism are very virulent and that they are strongly manifested in our country, and that there is an insatiable tendency toward accumulation and enrichment. Is it bad that he is irritated? I would also like to comment that there are few other places where there is such irresponsibility in monitoring and reporting income. We let people work, but everyone has to report everything, and it has to be measured out in the balance that he is paying what he is supposed to pay. The economy, and what is least important, cannot be the sole source of taxes. We have degraded the administration, the tax service, and the inspectorate, and we have made it possible for corruption to be abolished -- probably on a very large scale, if we had ever seriously dealt with the corruption that makes possible various economic and other malversations, and easy earnings. The best example of this is a construction site. Why do some people get furious when someone also emphasizes this side of our lives?

[Question] Can the economic stabilization program be carried out under the conditions of the abolition of ties within the Yugoslav economy?

[Answer] The fact is that during our political and economic history we have had several periods of lethargy. We reacted slowly, as a rule with short-term campaigns. There were no systematic actions. Among other things, it was for this reason that for years there was a process of the rounding off of, or attempts to round off, national economies for the republics and provinces. This process flew along.

#### Mortgage; a Difficult Burden

At the critical moment, when in 1975 and 1976 Yugoslavia started an economic development program with phantasmagorical ambitions of carrying out a restructuring of the economy, the political leadership was asleep or even only stood by the positions of rounding off national economies. All of this rushed headlong toward gypsy-like investments and foreign indebtedness. This happened at a time when the world was preparing for technological breakthroughs.

And now we are where we are. Now the question is how to tie together this enormous economic package, which is scattered throughout all parts of the country, and make it into one joint one, as we put it. I think that we should change the name and say the unified development policy of Yugoslavia in the key directions of economic development, on which the technological development of the country depends. This can no longer be a luxury at this time, if we speak of stabilization. This can be carried out in a process that would not weaken the autonomy and independence of each economic entity in each of our republics. There should be an awareness, however, that the unified interest is equally significant for the whole and for each separate part. This is a major task and an enormous mortgage on the backs of the political factors who are at the head of this country, and also those of our sociopolitical communities, i.e. the republics and provinces, which will be very much in effect until they are pushed aside by the force of associated labor.

[Question] Changes have been initiated in the political system. There are different opinions -- pro and con. How do you feel about this?

[Answer] Unfortunately, with this question we have come to the fact that we did not understand each other in my previous statement. I will emphasize again that I do not see who is against the changes in the economic and political system. The difference is in who sees what meaning in the concept of changes. Ask the question of whether people in general know what kind of changes are under way in the monetary, credit, and banking system. Everyone is talking about some kind of changes, but I assert that few people know what is meant by this. We aren't talking about concrete things at all. We are conducting a battle on some high abstract level -- for, against, for, against, instead of a concrete discussion of each ligament in the mechanism, so that we can see whether that ligament is capable of holding and whether the mechanism is efficient. Thus we would arrive at the fact that some things should be changed. This would not be merely tinkering with regulations. I do not understand the political system well enough to speak about it authoritatively. I could say what I like and what I do not like; these are impressions. My impressions are that we have not thoroughly investigated the contradictions of unity and cooperation with respect to national economies, and that this is the source of the problems in the political and economic system. Thus, this question should be studied authoritatively, and measures should be undertaken to eliminate these contradictions. The main problem, however, is the position of associated labor, which is suppressed, so that everything has been territorialized -- money, foreign exchange, and decision-making. And until we resolve this, we will have republic generalissimos.

[Question] What is going on with the anti-inflation program? Is it a link that has fallen out of sight?

[Answer] The most realistic and the most concrete part of the Long-Term Economic Stabilization Program was the anti-inflation program -- brief, clear, and realistic. There are some details that are unsuitable, for example, the one on turnover taxes, but that is one of the matters that is poorly defined in the Program as a whole. I have the impression that it was precisely

because of the concreteness of the anti-inflation program that it was discussed the least and tossed into a corner. This program required that appropriate measures be undertaken to make it possible to begin the process of the financial consolidation of the Yugoslav economy. It required an effort, but we accepted a rapidly sliding automatic mechanism that will bring us to a crash.

#### Counterproductive Effect of the Sliding Dinar

For this reason, it does not surprise me that those who supported it and contributed the most to developing it have constantly had major criticisms, and have warned against and resisted some measures and instruments when they began to be used in our country. The anti-inflation program and its author, or at least editor, Prof. CIROVIC, gave a very sharp warning about the idiocy of a sharp reversal in a restrictive monetary-credit policy. We were in agreement on this, almost all the monetary experts. Contrary to this, a sharp reversal really was made. We spoke about the counterproductive effect of the policy of a rapidly sliding dinar. I am appalled that many people whom I know very well from the period from 1970 and further on, when a bad policy of a revalued dinar was being conducted, and who firmly supported this policy--immediately appeared like ghosts, but now as advocates of compensating for the weaknesses of the policy of the currency exchange rate, i.e., the dinar exchange rate, for which they are responsible to a considerable extent. I am one of those who share the view that "the people that quarrels because of its past has little chance for the future." I will therefore not raise the question of who supported what. It is necessary, however, to raise the question of how we were able to carry out and undertake certain measures that were explicitly formulated differently in the Long-Term Economic Stabilization Program. Here are at least three examples for you: monetary policy, investments, interest rates, and the exchange rate. I know the full answer, but I know first, that it was copied from other people's books, and second, that it is an impression that everything can just be decreed. You prescribe the interest rate and exchange rate, set up a system for settling accounts, and then relax. The anti-inflation program required great efforts, and we are not inclined toward efforts. We are inclined toward regulations, but we will never swim the river with them. We have to swim.

What is essential is a product of collective consideration. In my opinion, this is the main reason why the Long-Term Economic Stabilization Program is not being implemented. Two programs cannot be carried out. This part is arbitrarily called "Cirovic's and Bajt's." They exclude each other.

It is almost tragic that the anti-inflation program is a link that has fallen out of our official sight. And inflation is continuing. Now it is already being said that in the first half of next year it will be higher than this year, since the base for this year is the way it is because of the price freezes. It is believed that it could slacken in the second half of 1985, but that is an illusion, since when the mechanism of the interest rates and exchange rate is set in motion on the basis of the results from

this year, the fate of inflation in the second half of the following year as well will be sealed.

[Question] Many polemics are being conducted over the Foreign Exchange Law. What solution would be acceptable, in your opinion?

[Answer] There is a fear on all sides of this foreign exchange system, and a fear of some of its radical changes. People have become so upset that unfortunately, I do not see any chance of our reaching an agreement on the long-term solution for these relations either in three months or in three years. I think that today these relations are such that they can only be surmounted through the persistent construction of cooperation, which is the scarcest link in our production system. I do not, however, see any solution that could be acceptable at this time. That is why I am a pessimist. I think that we have to approach the problem of foreign exchange relations from a different angle, i.e. using all possible means to impose the principles of joint production, joint imports and joint exports in our economy. That is a system of a flexible production linkage that some people have vulgarized. It is a complex system of numerous production ties, and not ossified ones -- boxes cut out like a cabinet.

[Insert]

I assert that it was not agreed anywhere in the stabilization program that we would slide the dinar like this, or that we would increase interest rates like this. The Fund demanded this, and we agreed to it. I am convinced that we should not have done this, however. If I thought differently, it would mean that I did not believe in this Yugoslavia of ours -- the way it is.

[Insert]

Where Did the .7 Come From?

I am one of those who do not believe in the omnibus that we called the statistical index of prices. It is prepared like sataras [a dish made from chopped onions, peppers, etc.] through a machine for grinding meat. It includes the prices of subway maps, radio and television fees, the prices of newspapers, bread, everything from needles to locomotives, to the price of the submarines that we are building for our navy. And then people ponder over this and calculate the share of the needles in this measureless, overall multitude of prices. Thus we prepare beautiful price statistics, and then calculate that inflation is 55.7 percent. I do not know where the .7 came from. In the final analysis, a person estimates inflation perhaps also on the basis of impressions or the difficulties he encounters. It is the same story, however, whether it was 57.9 or 62.3 percent. Inflation is a major threat to relations and our position with respect to the rest of the world.

[Insert]

#### Indebted by Force

I assert that the interest paid by our organizations of associated labor for short-term credits are at least twice as high as real interest rates. This is because they are paying interest for a debt that they did not need to incur, but did incur because their funds were taken away from them. Thus, if someone forces an OUR to pay such interest, the same interest rate should also be paid to it for all the funds that are deposited. And some comrades have apparently accepted this.

[Insert]

The anti-inflation program talks about the problem of social implications. It is very moderate in this regard, but even this is not being respected. If this anti-inflation program is bad, then the Commission that adopted it should meet to say why it is no good and to develop another one. Today I would be the one to insist on this kind of anti-inflation program, even if some things were formulated somewhat differently. At any rate, that is not essential, since everything cannot be the way I think it should be.

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